

500 505 510
 Glu Tyr Tyr Ser Arg Ala Ala Asp Ala Val Ala Thr Leu Lys Gln Pro
 515 520 525
 Lys Glu Pro Ser Ser Ser Ile Val Arg Glu Ala Gln Glu Ser Val Glu
 530 535 540
 Gln Glu Glu Met Ala Val Leu
 545 550
 <210>654
 <211>377
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>654
 Ile Thr Leu Ala Glu Phe Ala Gly Thr Xaa Ala Tyr Leu Glu Glu Tyr
 1 5 10 15
 Val Asp Ile Ile Arg Ser Lys Ser Ile Leu Arg Lys Met Ile Ser Thr
 20 25 30
 Ala Lys Glu Ile Glu Lys Arg Ala Leu Glu Gln Pro Lys Asn Val Ala
 35 40 45
 Glu Ala Leu Asp Glu Ala Gln Asn Ser Phe Phe Lys Ile Ser Gln Ser
 50 55 60
 Thr Ser Val Ser Gln Tyr Thr Leu Val Ala Asp Lys Leu Arg Gly Leu
 65 70 75 80
 Thr Thr Thr Thr Asp Lys Pro Tyr Leu Val Gln Leu Gln Glu Arg Gln
 85 90 95
 Glu Leu Phe Leu Gln Asn Ala Gln Gly Asp Asn Lys Ser Phe Phe Thr
 100 105 110
 Gly Ile Pro Thr His Phe Ile Asp Leu Asp Gln Leu Ile His Gly Phe
 115 120 125
 Ser Pro Ser Asn Leu Met Ile Leu Ala Ala Arg Pro Ala Met Gly Lys
 130 135 140
 Thr Ala Leu Ala Leu Asn Ile Ala Glu Asn Leu Cys Phe Gln Asn Arg
 145 150 155 160
 Leu Pro Ile Gly Ile Phe Ser Leu Glu Met Thr Val Asp Gln Leu Ile
 165 170 175
 His Arg Met Ile Cys Ser Arg Ser Glu Val Asp Ser Lys Lys Ile Ser
 180 185 190
 Ile Gly Asp Leu Ser Gly His Asp Phe Gln Arg Ile Val Ser Val Ile
 195 200 205
 Asn Glu Met Gln Glu His Thr Leu Leu Ile Asp Asp Gln Pro Gly Leu
 210 215 220
 Lys Val Ser Asp Leu Arg Ala Arg Ala Arg Arg Met Lys Glu Ser Tyr
 225 230 235 240
 Asp Ile Gln Phe Leu Ile Ile Asp Tyr Leu Gln Leu Leu Ser Gly Ser
 245 250 255
 Gly Thr Leu Arg Ala Thr Glu Ser Arg Gln Thr Glu Ile Ser Glu Ile
 260 265 270
 Ser Arg Met Leu Lys Thr Leu Ala Arg Glu Leu Asn Ile Pro Ile Leu
 275 280 285
 Cys Leu Ser Gln Leu Ser Arg Lys Val Glu Asp Arg Ala Asn His Arg
 290 295 300
 Pro Met Met Ser Asp Leu Arg Glu Ser Gly Ser Ile Glu Gln Asp Ser
 305 310 315 320
 Asp Leu Val Met Phe Leu Leu Arg Arg Glu Tyr Tyr Asp Pro Asn Asp
 325 330 335
 Lys Pro Gly Thr Ala Glu Leu Ile Ile Ala Lys Asn Arg His Gly Ser
 340 345 350
 Ile Gly Ser Val Pro Leu Val Phe Glu Lys Glu Leu Ala Arg Phe Arg
 355 360 365
 Asn Tyr Ser Ala Phe Glu Cys Ile Ser
 370 375
 <210>655
 <211>611
 <212>PRT
 <213>Chlamydia pneumoniae

<400>655

Met Trp Thr His Pro Ile Ala Tyr Asp Val Ile Val Val Gly Ala Gly
 1 5 10 15
 His Ala Gly Cys Glu Ala Ala Tyr Cys Ser Ala Lys Met Gly Val Ser
 20 25 30
 Val Leu Met Leu Thr Ser Asn Leu Asp Thr Ile Ala Lys Leu Ser Cys
 35 40 45
 Asn Pro Ala Val Gly Gly Ile Gly Lys Gly His Ile Val Arg Glu Ile
 50 55 60
 Asp Ala Leu Gly Gly Ile Met Ala Glu Val Thr Asp Gln Ser Gly Ile
 65 70 75 80
 Gln Phe Arg Ile Leu Asn Gln Thr Lys Gly Pro Ala Val Arg Ala Pro
 85 90 95
 Arg Ala Gln Val Asp Lys Gln Leu Tyr His Ile His Met Lys Arg Leu
 100 105 110
 Leu Glu Asn Thr Pro Gly Leu His Ile Met Gln Ala Thr Val Glu Ser
 115 120 125
 Leu Leu Asp Lys Glu Gly Val Ile Ser Gly Val Thr Thr Lys Glu Gly
 130 135 140
 Trp Met Phe Ser Gly Lys Thr Val Val Leu Ser Ser Gly Thr Phe Met
 145 150 155 160
 Arg Gly Leu Ile His Ile Gly Asp Arg Asn Phe Ser Gly Gly Arg Leu
 165 170 175
 Gly Asp Pro Ser Ser Gln Gly Leu Ser Glu Asp Leu Lys Lys Arg Gly
 180 185 190
 Phe Pro Ile Ser Arg Leu Lys Thr Gly Thr Pro Pro Arg Leu Leu Ala
 195 200 205
 Ser Ser Ile Asn Phe Ser Cys Met Glu Glu Gln Pro Gly Asp Leu Gly
 210 215 220
 Val Gly Phe Val His Arg Thr Glu Pro Phe Gln Pro Pro Leu Pro Gln
 225 230 235 240
 Leu Ser Cys Phe Ile Thr His Thr Met Glu Lys Thr Lys Ala Ile Ile
 245 250 255
 Ser Ala Asn Leu His Arg Ser Ala Leu Tyr Gly Gly Cys Ile Glu Gly
 260 265 270
 Val Gly Pro Arg Tyr Cys Pro Ser Ile Glu Asp Lys Ile Val Lys Phe
 275 280 285
 Ser Asp Lys Glu Arg His His Val Phe Leu Glu Pro Glu Gly Leu His
 290 295 300
 Thr Gln Glu Ile Tyr Ala Asn Gly Leu Ser Thr Ser Met Pro Phe Asp
 305 310 315 320
 Val Gln Tyr Asp Met Ile Arg Ser Val Leu Gly Leu Glu Asn Ala Ile
 325 330 335
 Ile Thr Arg Pro Ala Tyr Ala Ile Glu Tyr Asp Tyr Ile His Gly Asn
 340 345 350
 Val Ile His Pro Thr Leu Glu Ser Lys Leu Ile Glu Gly Leu Phe Leu
 355 360 365
 Cys Gly Gln Ile Asn Gly Thr Thr Gly Tyr Glu Glu Ala Ala Ala Gln
 370 375 380
 Gly Leu Ile Ala Gly Ile Asn Ala Val Asn Lys Val Phe Asn Arg Pro
 385 390 395 400
 Pro Phe Ile Pro Ser Arg Gln Glu Ser Tyr Ile Gly Val Met Leu Asp
 405 410 415
 Asp Leu Thr Thr Gln Ile Leu Asp Glu Pro Tyr Arg Met Phe Thr Gly
 420 425 430
 Arg Ala Glu His Arg Leu Leu Leu Arg Gln Asp Asn Ala Cys Ala Arg
 435 440 445
 Leu Ser His Tyr Gly Tyr Glu Leu Gly Leu Leu Ser Glu Glu Arg Tyr
 450 455 460
 Glu Leu Val Lys Lys Gln Asn Gln Leu Leu Glu Glu Glu Lys Val Arg
 465 470 475 480
 Leu Gln Lys Thr Phe Arg Gln Tyr Gly Gln Ser Val Val Ser Leu Ala
 485 490 495
 Lys Ala Leu Ser Arg Pro Glu Val Ser Tyr Asp Met Leu Arg Glu Ala

500 505 510
 Phe Pro Asn Asp Ile Arg Asp Leu Gly Ala Val Leu Asn Ala Ser Leu
 515 520 525
 Glu Met Glu Ile Lys Tyr Ser Gly Tyr Ile Asp Arg Gln Lys Ile Leu
 530 535 540
 Ile Gln Ser Leu Glu Lys Ala Glu Ser Leu Leu Ile Pro Glu Asp Leu
 545 550 555 560
 Asp Tyr Lys Gln Ile Thr Ala Leu Ser Leu Glu Ala Gln Glu Lys Leu
 565 570 575
 Ala Lys Phe Thr Pro Arg Thr Leu Gly Ser Ala Ser Arg Ile Ser Gly
 580 585 590
 Ile Ala Ser Ala Asp Ile Gln Val Leu Met Ile Ala Leu Lys Lys His
 595 600 605
 Ala His His
 610

<210>656

<211>217

<212>PRT

<213>Chlamydia pneumoniae

<400>656

Lys Asn Met Pro Thr Thr Asn Cys Ile Phe Leu Asp Leu Arg Gly His
 1 5 10 15
 Ser Ile Leu His Gln Leu Gln Ile Glu Glu Ala Leu Leu Arg Val Ala
 20 25 30
 Asn Gln Asn Phe Cys Ile Ile Asn Ser Gly Ala Lys Asp Ser Ile Val
 35 40 45
 Leu Gly Ile Ser Arg Asn Leu Asn Gln Asp Val His Ile Ser Arg Ala
 50 55 60
 Gln Ala Asp His Ile Pro Ile Ile Arg Arg Tyr Ser Gly Gly Gly Thr
 65 70 75 80
 Val Phe Ile Asp Ser Asn Thr Leu Met Val Ser Trp Ile Met Asn Ser
 85 90 95
 Ser Glu Ala Ser Ala Gln Pro Gln Glu Leu Leu Ala Trp Thr Tyr Gly
 100 105 110
 Ile Tyr Ser Pro Leu Leu Pro Asn Thr Phe Ser Ile Arg Glu Asn Asp
 115 120 125
 Tyr Val Leu Gly His Lys Lys Ile Gly Gly Asn Ala Gln Tyr Ile Gln
 130 135 140
 Arg His Arg Trp Val His His Thr Thr Phe Leu Trp Asp Ile Asp Leu
 145 150 155 160
 Asp Lys Leu Ser Tyr Tyr Leu Pro Ile Pro Gln Gln Gln Pro Thr Tyr
 165 170 175
 Arg Asn Gln Arg Ser His Glu Glu Phe Leu Thr Thr Leu Arg Pro Trp
 180 185 190
 Phe Pro Ser Arg Asp Asp Phe Leu Glu Arg Ile Lys Ala Ser Gly Ser
 195 200 205
 Leu Leu Phe Tyr Leu Gly Arg Ile Ser
 210 215

<210>657

<211>144

<212>PRT

<213>Chlamydia pneumoniae

<400>657

Met Glu Gln Thr Leu Ser Ile Ile Lys Pro Asp Ser Val Ser Lys Ala
 1 5 10 15
 His Ile Gly Glu Ile Leu Ser Ile Phe Glu Gln Ser Gly Leu Arg Ile
 20 25 30
 Ala Ala Met Lys Met Met His Leu Ser Gln Thr Glu Ala Glu Gly Phe
 35 40 45
 Tyr Phe Val His Arg Glu Arg Pro Phe Phe Gln Glu Leu Val Asp Phe
 50 55 60
 Met Val Ser Gly Pro Val Val Val Leu Val Leu Glu Gly Ala Asn Ala
 65 70 75 80
 Val Ser Arg Asn Arg Glu Leu Met Gly Ala Thr Asn Pro Ala Glu Ala

85 90 95
 Ala Ser Gly Thr Ile Arg Ala Lys Phe Gly Glu Ser Ile Gly Val Asn
 100 105 110
 Ala Val His Gly Ser Asp Thr Leu Glu Asn Ala Ala Val Glu Ile Ala
 115 120 125
 Tyr Phe Phe Ser Lys Ile Glu Val Val Asn Ala Ser Lys Pro Leu Val
 130 135 140
 <210>658
 <211>207
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>658
 Met Tyr Asp Tyr Ile Arg Gly Thr Leu Thr Tyr Val His Thr Gly Ala
 1 5 10 15
 Ile Val Ile Glu Cys Gln Gly Ile Gly Tyr His Ile Ala Ile Thr Glu
 20 25 30
 Arg Trp Ala Ile Glu Cys Ile Arg Ala Leu His Gln Asp Phe Leu Val
 35 40 45
 Phe Thr His Val Ile Phe Arg Glu Thr Glu His Leu Leu Tyr Gly Phe
 50 55 60
 His Ser Arg Glu Glu Arg Glu Cys Phe Arg Ile Leu Ile Ser Phe Ser
 65 70 75 80
 Gly Ile Gly Pro Lys Leu Ala Leu Ala Ile Leu Asn Ala Leu Pro Leu
 85 90 95
 Lys Val Leu Cys Ser Val Val Arg Ser Glu Asp Ile Arg Ala Leu Ala
 100 105 110
 Ser Val Ser Gly Ile Gly Lys Lys Thr Ala Glu Lys Leu Met Val Glu
 115 120 125
 Leu Lys Gln Lys Leu Pro Asp Leu Leu Pro Leu Asp Ser Arg Val Glu
 130 135 140
 Thr Ser Gln Thr His Thr Thr Ser Ser Cys Leu Glu Glu Gly Ile Gln
 145 150 155 160
 Ala Leu Ala Ala Leu Gly Tyr Ser Lys Ile Ala Ala Glu Arg Met Ile
 165 170 175
 Ala Glu Ala Ile Lys Asp Leu Pro Glu Gly Ser Ser Leu Thr Asp Ile
 180 185 190
 Leu Pro Ile Ala Leu Lys Lys Asn Phe Ser Gly Val Asn Lys Asp
 195 200 205
 <210>659
 <211>168
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>659
 Val Ser Glu Leu Ile Ile Gly Val Asp Pro Gly Thr Ile Val Ala Gly
 1 5 10 15
 Tyr Ala Ile Ile Ala Val Glu Gln Arg Tyr Gln Leu Arg Pro Tyr Ser
 20 25 30
 Tyr Gly Ala Ile Arg Leu Ser Ser Asp Met Pro Leu Pro Met Arg Tyr
 35 40 45
 Lys Thr Leu Phe Glu Gln Leu Ser Gly Val Leu Asp Thr Gln Pro
 50 55 60
 Asn Ala Met Val Leu Glu Thr Gln Phe Val Asn Lys Asn Pro Gln Ser
 65 70 75 80
 Thr Met Lys Leu Ala Met Ala Arg Gly Ile Val Leu Leu Ala Ala Ala
 85 90 95
 Gln Arg Asp Ile Leu Ile Phe Glu Tyr Ala Pro Asn Val Ala Lys Lys
 100 105 110
 Ala Val Val Gly Lys Gly His Ala Ser Lys Arg Gln Val Gln Val Met
 115 120 125
 Val Ser Lys Ile Leu Asn Val Pro Glu Val Leu His Pro Ser Asn Glu
 130 135 140
 Asp Ile Ala Asp Ala Phe Ala Leu Ala Ile Cys His Thr His Val Ala
 145 150 155 160
 Arg Ser Pro Leu Cys Gly Val Arg

165

<210>660

<211>323

<212>PRT

<213>Chlamydia pneumoniae

<400>660

Arg Tyr Ser Val Arg Leu Leu Ser Ile Leu Lys Leu His Leu Phe Ser
 1 5 10 15
 Leu Arg Ser Ser Ser Leu Ser Pro His Tyr Tyr His Ser Cys Ser
 20 25 30
 Arg Ser Met Leu His Leu Leu Cys Arg Trp Lys Asp Ala Asp Ile Met
 35 40 45
 Glu Trp Gln Gln Ile Cys Asn Ile Leu Ser Gly Val Cys Ser Arg Met
 50 55 60
 Ser Gly Lys Leu Val Ser Leu Gln Lys Glu Thr Gln Asp Ser Cys His
 65 70 75 80
 Gln Glu His Glu Arg Ile His Leu Gln Tyr Arg Glu Gln Leu Ser Ala
 85 90 95
 Leu Glu Glu Glu Tyr Arg Arg Arg Glu Ala Lys Asn Gln Asp Leu
 100 105 110
 Glu Lys Leu Gln Gln Glu Asn Thr Trp Leu Gln Asn Arg Leu Ala Glu
 115 120 125
 Lys Leu Gln Gln Ile Arg His Gln Ser Asp Ile Ile Asp Glu Ile Lys
 130 135 140
 Lys Glu Leu Leu Gln Ser Val Gln Arg Thr Glu Ile Ser Glu Gly Arg
 145 150 155 160
 Arg Leu Cys Tyr Glu His Lys Ile Lys Gln Leu Glu Glu Gln Leu Gln
 165 170 175
 Arg Tyr Val Ser Gln His Gly Ala Pro Ser Ile Glu Ile Glu Glu Asp
 180 185 190
 Lys Ser Ser Ala Ala Tyr Ala Glu Ile Asn Arg Leu Lys Lys Ser Leu
 195 200 205
 Ile Asp Leu Gln Gln Glu Lys Asp Ile Tyr Ile Lys Thr Tyr His Ser
 210 215 220
 Glu Ile Ala Lys Leu Arg Glu Lys Leu Gln Arg Gln Glu Gly Ala Gln
 225 230 235 240
 Thr Ser Ser Glu Val Cys Ser Ile Glu Lys Leu Thr Glu Val Gln Thr
 245 250 255
 Asp Leu Ala Glu Lys Lys Lys Ala Ile Ala Leu Leu Gln Asp Ile Val
 260 265 270
 Glu Asp Gln Tyr Cys Gln Leu Arg Asp Leu His Lys Glu Lys Gly Met
 275 280 285
 Ala Met Pro Ser Asn Thr Lys Leu Asp His Leu Lys Gly Leu Leu Gly
 290 295 300
 Lys Glu Pro Glu Ser Glu Val Asp Val Val Phe Ser Glu Ser Lys Ser
 305 310 315 320
 Leu Gly Ser

<210>661

<211>282

<212>PRT

<213>Chlamydia pneumoniae

<400>661

Lys Gly Tyr Asn Tyr Val Tyr Phe Thr Arg Asp Pro Val Ile Glu Thr
 1 5 10 15
 Val Ile Thr Ser Arg Glu Gly Tyr Lys Leu Ser Val Arg Asn Thr Lys
 20 25 30
 His Phe Ser Gln Asp Pro Phe Met Val Glu Ala Ile Glu Val Ile Ser
 35 40 45
 Leu Gly Asn Ile Cys Phe Phe Arg Asn Cys Asp His Ser Lys Pro Phe
 50 55 60
 Leu Val Pro Ala Gly Asp Tyr Glu Val Met Glu Val Arg Asp Thr Lys
 65 70 75 80
 Ile Asn Leu Lys Ala Val Gly Leu Asp Arg Gly Val Lys Ile Ala Gly

85 90 95
 Gly Arg Glu Ala Leu Ile Lys Leu Thr Lys Ser Thr Pro Leu Pro Val
 100 105 110
 Ile Asp Glu Lys Pro Leu Ala Asp Ser Pro Glu Glu Gly Thr Glu Pro
 115 120 125
 Thr Ser Pro Ser Lys Lys Glu Lys Lys Glu Ala Arg Lys Asp Ser Phe
 130 135 140
 Lys Gly Glu Lys Trp Lys Glu Lys Lys Lys Leu Ser Arg Arg Arg Asn
 145 150 155 160
 His Lys Glu Ile Ala Glu Val Thr Gly Ala Ser Gln Glu Ile Leu Asp
 165 170 175
 Thr Val Lys Glu Glu Leu Trp Glu Glu Ser Gln Glu Asn Glu Ile Val
 180 185 190
 Glu Gln Lys Lys Phe Ser Leu Leu Pro Pro Ala Lys Leu Ile Ser
 195 200 205
 Glu Val Ile Ser Gln Thr Val Val Asp Pro Val Val Thr Ser Ala Asp
 210 215 220
 Leu Asn Glu Ser Leu Gln Ala Leu Val Arg Glu Ser Ser Asp Leu Ile
 225 230 235 240
 Asn Ala Leu Leu Ser Ala Asp Asp Ala Ile His Phe Pro Glu Thr Glu
 245 250 255
 Glu Glu Pro Thr Ser Ala Ser Phe Glu Glu Ser Ser Ala Met Phe Phe
 260 265 270
 Pro Glu Thr Ser Ser Ala Thr Glu Glu
 275 280
 <210>662
 <211>336
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>662
 Ala Met Lys Val Val Ile Asn Gly Phe Gly Arg Ile Gly Arg Leu Val
 1 5 10 15
 Phe Arg Gln Ile Leu Lys Arg Asn Ser Ser Val Glu Val Leu Ala Ile
 20 25 30
 Asn Asp Leu Val Pro Gly Asp Ala Leu Thr Tyr Leu Phe Lys Phe Asp
 35 40 45
 Ser Thr His Gly Arg Phe Pro Glu Asp Val Arg Cys Glu Ala Asp His
 50 55 60
 Leu Ile Val Gly Lys Arg Lys Ile Gln Phe Leu Ser Glu Arg Asn Val
 65 70 75 80
 Gln Asn Leu Pro Trp Lys Asp Leu Gly Val Asp Leu Val Ile Glu Cys
 85 90 95
 Thr Gly Leu Phe Thr Lys Lys Glu Asp Ala Glu Lys His Ile Gln Ala
 100 105 110
 Gly Ala Lys Arg Val Leu Ile Ser Ala Pro Gly Lys Gly Asp Ile Pro
 115 120 125
 Thr Phe Val Met Gly Val Asn His Lys Thr Phe Asn Pro Glu Lys Asp
 130 135 140
 Phe Val Ile Ser Asn Ala Ser Cys Thr Thr Asn Cys Leu Ala Pro Ile
 145 150 155 160
 Ala Lys Val Leu Leu Asp Asn Phe Gly Ile Thr Glu Gly Leu Met Thr
 165 170 175
 Thr Val His Ala Ala Thr Ala Thr Gln Leu Val Val Asp Gly Pro Ser
 180 185 190
 Lys Lys Asp Trp Arg Gly Gly Arg Gly Cys Leu Gln Asn Ile Ile Pro
 195 200 205
 Ala Ser Thr Gly Ala Ala Lys Ala Val Thr Leu Cys Leu Pro Glu Leu
 210 215 220
 Lys Gly Lys Leu Thr Gly Met Ala Phe Arg Val Pro Ile Glu Asp Val
 225 230 235 240
 Ser Val Val Asp Leu Thr Val Arg Leu Asp Lys Ser Thr Thr Tyr Asp
 245 250 255
 Asp Ile Cys Lys Ala Met Lys Gln Ala Ser Glu Thr Asp Leu Lys Gly
 260 265 270

Ile Leu Asp Tyr Thr Asp Glu Gln Val Val Ser Ser Asp Phe Ile Gly
 275 280 285
 Ser Glu Tyr Ser Ser Ile Phe Asp Ala Leu Ala Gly Ile Ala Leu Asn
 290 295 300
 Asp Arg Phe Phe Lys Leu Val Ala Trp Tyr Asp Asn Glu Thr Gly Tyr
 305 310 315 320
 Ala Thr Arg Ile Val Asp Leu Leu Glu Tyr Val Glu Lys Asn Ser Lys
 325 330 335

<210>663

<211>129

<212>PRT

<213>Chlamydia pneumoniae

<400>663

Met Gln His Ala Arg Lys Lys Phe Arg Val Gly Arg Thr Ser Ser His
 1 5 10 15
 Asn Arg Cys Met Leu Ala Asn Met Leu Lys Ser Leu Ile His Tyr Glu
 20 25 30
 Arg Ile Glu Thr Thr Leu Pro Lys Ala Lys Glu Leu Arg Arg His Ala
 35 40 45
 Asp Lys Met Ile Thr Leu Ala Lys Lys Asn Ser Leu Ala Ala Arg Arg
 50 55 60
 Ile Ala Ile Gly Arg Leu Met Val Arg Tyr Asn Lys Leu Thr Ser Lys
 65 70 75 80
 Glu Ala Arg Gln Ala Lys Gly Gly Asp Thr Ser Val Tyr Asn Val Asp
 85 90 95
 Arg Leu Val Val Asn Lys Leu Phe Asp Glu Leu Gly Asn Arg Phe Val
 100 105 110
 Glu Arg Lys Gly Gly Tyr Thr Arg Ile Leu Lys Leu Gln Asn Arg Thr
 115 120 125
 Trp

<210>664

<211>337

<212>PRT

<213>Chlamydia pneumoniae

<400>664

Ala Ser Arg Lys Arg Asn Gly Pro His Phe Arg Lys Cys Ser Lys Thr
 1 5 10 15
 Cys Phe Ala Tyr Trp Phe Arg Ser Ser Arg Tyr Leu Ile Ser Phe Ala
 20 25 30
 Met Thr Gly Val Leu His Glu Tyr Met Ala Ile Glu Gly Val Ile Glu
 35 40 45
 Asp Val Thr Asn Ile Ile Leu Asn Leu Lys Gly Ala Leu Leu Lys Lys
 50 55 60
 Tyr Pro Met Gln Asp Ser Ser Leu Gly Arg Thr Thr Gln Val Leu Lys
 65 70 75 80
 Ala Ser Ile Ser Ile Asp Ala Ser Asp Leu Ala Ala Ala Asn Gly Gln
 85 90 95
 Lys Glu Val Thr Leu Gln Asp Leu Leu Gln Glu Gly Asp Phe Glu Ala
 100 105 110
 Val Asn Pro Asp Gln Val Ile Phe Thr Val Thr Gln Pro Ile Gln Leu
 115 120 125
 Glu Val Asp Leu Arg Ile Ala Phe Gly Arg Gly Tyr Thr Pro Ser Glu
 130 135 140
 Arg Ile Val Leu Glu Asp Lys Gly Val Tyr Glu Ile Val Leu Asp Ala
 145 150 155 160
 Ala Phe Ser Pro Val Thr Leu Val Asn Tyr Phe Val Glu Asp Thr Arg
 165 170 175
 Val Gly Gln Asp Thr Asp Phe Asp Arg Leu Val Leu Ile Val Glu Thr
 180 185 190
 Asp Gly Arg Val Thr Pro Lys Glu Ala Leu Ala Phe Ser Thr Gln Ile
 195 200 205
 Leu Thr Lys His Phe Ser Ile Phe Glu Asn Met Asp Glu Lys Lys Ile
 210 215 220

Val Phe Glu Glu Ala Ile Ser Ile Glu Lys Glu Asn Lys Asp Asp Ile
 225 230 235 240
 Leu His Lys Leu Ile Leu Gly Ile Asn Glu Ile Glu Leu Ser Val Arg
 245 250 255
 Ser Thr Asn Cys Leu Ser Asn Ala Asn Ile Glu Thr Ile Gly Glu Leu
 260 265 270
 Val Ile Met Pro Glu Pro Arg Leu Leu Gln Phe Arg Asn Phe Gly Lys
 275 280 285
 Lys Ser Leu Cys Glu Ile Lys Asn Lys Leu Lys Glu Met Lys Leu Glu
 290 295 300
 Leu Gly Met Asp Leu Thr Gln Phe Gly Val Gly Leu Asp Asn Val Lys
 305 310 315 320
 Glu Lys Met Lys Trp Tyr Ala Glu Lys Ile Arg Ala Lys Asn Ile Lys
 325 330 335
 Gly

<210>665

<211>82

<212>PRT

<213>Chlamydia pneumoniae

<400>665

Leu Pro Ala Lys Lys Lys Ala Gln Ser Val Val Leu Gly Lys Glu Lys
 1 5 10 15
 Gly Met Ser Asp Asn Ala His Asn Leu Leu Tyr Asp Lys Phe Glu Leu
 20 25 30
 Pro Glu Ala Val Lys Met Leu Pro Val Glu Gly Leu Pro Ile Asp Lys
 35 40 45
 His Ala Arg Phe Ile Ala Glu Pro Leu Glu Arg Gly Met Gly His Thr
 50 55 60
 Leu Gly Asn Ala Leu Arg Arg Ala Leu Leu Ile Gly Leu Glu Ala Pro
 65 70 75 80
 Gly Ile

<210>666

<211>133

<212>PRT

<213>Chlamydia pneumoniae

<400>666

Leu Val Lys Asn Gln Ala Gln Ala Lys Lys Ser Val Lys Arg Lys Gln
 1 5 10 15
 Leu Lys Asn Ile Pro Ser Gly Val Val His Val Lys Ala Thr Phe Asn
 20 25 30
 Asn Thr Ile Val Ser Ile Thr Asp Pro Ala Gly Asn Val Ile Ser Trp
 35 40 45
 Ala Ser Ala Gly Lys Val Gly Tyr Ser Gly Ser Xaa Lys Ser Ser Ala
 50 55 60
 Phe Ala Ala Thr Val Ala Ala Gln Asp Ala Ala Lys Thr Ala Met Asn
 65 70 75 80
 Ser Gly Leu Lys Glu Xaa Xaa Val Cys Leu Lys Gly Thr Gly Ala Gly
 85 90 95
 Arg Glu Ser Ala Val Arg Ala Leu Ile Ser Ala Gly Leu Val Val Ser
 100 105 110
 Val Ile Arg Asp Glu Thr Pro Val Pro His Asn Gly Cys Arg Pro Arg
 115 120 125
 Lys Arg Arg Arg Val
 130

<210>667

<211>122

<212>PRT

<213>Chlamydia pneumoniae

<400>667

Met Pro Arg Ile Ile Gly Ile Asp Ile Pro Ala Lys Lys Lys Leu Lys
 1 5 10 15
 Ile Ser Leu Thr Tyr Ile Tyr Gly Ile Gly Ser Ala Arg Ser Asp Glu

20 25 30
 Ile Ile Lys Lys Leu Lys Leu Asp Pro Glu Ala Arg Ala Ser Glu Leu
 35 40 45
 Thr Glu Glu Glu Val Gly Arg Leu Asn Ser Leu Leu Gln Ser Glu Tyr
 50 55 60
 Thr Val Glu Gly Asp Leu Arg Arg Arg Val Gln Ser Asp Ile Lys Arg
 65 70 75 80
 Leu Ile Ala Ile His Ser Tyr Arg Gly Gln Arg His Arg Leu Ser Leu
 85 90 95
 Pro Val Arg Gly Gln Arg Thr Lys Thr Asn Ser Arg Thr Arg Lys Gly
 100 105 110
 Lys Arg Lys Thr Val Ala Gly Lys Lys Lys
 115 120

<210>668

<211>462

<212>PRT

<213>Chlamydia pneumoniae

<400>668

Leu Phe Arg Pro Tyr Met Thr Thr Leu Arg Gln Phe Phe Leu Ile Thr
 1 5 10 15
 Glu Leu Arg Gln Lys Leu Phe Tyr Thr Phe Ala Leu Leu Thr Ala Cys
 20 25 30
 Arg Val Gly Val Phe Ile Pro Val Pro Gly Ile Asn Gly Glu Leu Ala
 35 40 45
 Val Ala Tyr Phe Lys Gln Leu Leu Gly Ser Gly Gln Asn Leu Phe Gln
 50 55 60
 Leu Ala Asp Ile Phe Ser Gly Gly Ala Phe Ala Gln Met Thr Val Ile
 65 70 75 80
 Ala Leu Gly Val Val Pro Tyr Ile Ser Ala Ser Ile Ile Val Gln Leu
 85 90 95
 Phe Leu Val Phe Met Pro Ala Leu Gln Arg Glu Met Arg Glu Ser Ser
 100 105 110
 Asp Gln Gly Lys Arg Arg Ile Gly Arg Leu Thr Arg Leu Phe Thr Val
 115 120 125
 Ala Leu Ala Val Ile Gln Ser Leu Leu Phe Ala Lys Phe Ala Leu Arg
 130 135 140
 Met Asn Leu Thr Ile Pro Gly Ile Val Leu Pro Thr Leu Leu Ser Ser
 145 150 155 160
 Lys Leu Phe Gly Val Pro Trp Ile Phe Tyr Ile Thr Thr Val Val Val
 165 170 175
 Met Thr Thr Gly Thr Leu Leu Leu Met Trp Ile Gly Glu Gln Ile Ser
 180 185 190
 Asp Lys Gly Ile Gly Asn Gly Ile Ser Leu Ile Ile Ala Leu Gly Ile
 195 200 205
 Leu Ser Ser Phe Pro Ser Val Leu Gly Ser Ile Val Asn Lys Leu Asn
 210 215 220
 Leu Gly Ser Gln Asp Ser Ser Asp Leu Gly Leu Ile Ser Ile Leu Ile
 225 230 235 240
 Leu Ala Leu Val Phe Val Phe Val Leu Ile Thr Thr Ile Leu Ile Ile
 245 250 255
 Glu Gly Val Arg Lys Ile Pro Val Gln Tyr Ala Arg Arg Val Ile Gly
 260 265 270
 Arg Arg Glu Val Pro Gly Gly Gly Ser Tyr Leu Pro Leu Lys Val Asn
 275 280 285
 Tyr Ala Gly Val Ile Pro Val Ile Phe Ala Ser Ser Leu Leu Met Phe
 290 295 300
 Pro Ala Thr Ile Gly Gln Phe Ile Ala Ser Glu Ser Ser Trp Met Lys
 305 310 315 320
 Arg Ile Ala Ala Leu Leu Ala Pro Gly Ser Leu Val Tyr Ser Ile Cys
 325 330 335
 Tyr Val Leu Leu Ile Ile Phe Phe Thr Tyr Phe Trp Thr Ala Thr Gln
 340 345 350
 Phe His Pro Glu Gln Ile Ala Ser Glu Met Lys Lys Asn Asn Ala Phe
 355 360 365

Ile Pro Gly Ile Arg Gln Gly Lys Pro Thr Gln His Tyr Leu Glu Tyr
 370 375 380
 Thr Met Asn Arg Val Thr Leu Leu Gly Ala Leu Phe Leu Ala Ala Ile
 385 390 395 400
 Ala Ile Leu Pro Ser Leu Leu Gly Cys Leu Leu Arg Val Asp Ser Asn
 405 410 415
 Val Ser Tyr Phe Leu Gly Gly Thr Ala Met Leu Ile Val Val Gly Val
 420 425 430
 Val Leu Asp Thr Met Lys Gln Val Asp Ala Phe Leu Leu Met Arg Arg
 435 440 445
 Tyr Asp Ser Val Leu Lys Thr Asp Arg Thr Lys Gly Arg His
 450 455 460

<210>669

<211>144

<212>PRT

<213>Chlamydia pneumoniae

<400>669

Met Ile Lys Leu Glu Ser Leu Phe Asp Ile Ser Glu Arg Lys Arg Arg
 1 5 10 15
 Lys Lys Leu Leu Gly Arg Gly Pro Ser Ser Gly His Gly Lys Thr Ser
 20 25 30
 Gly Arg Gly His Lys Gly Asp Gly Ser Arg Ser Gly Tyr Lys Arg Arg
 35 40 45
 Phe Gly Tyr Glu Gly Gly Gly Val Pro Leu Tyr Arg Arg Val Pro Thr
 50 55 60
 Arg Gly Phe Ser His Lys Arg Phe Asp Lys Cys Val Glu Glu Ile Thr
 65 70 75 80
 Thr Gly Arg Leu Ala Glu Leu Phe Gln Glu Gly Glu Ala Ile Thr Leu
 85 90 95
 Asp Ala Leu Lys Ala Lys Lys Ala Ile Ala Arg Gln Ala Val Arg Val
 100 105 110
 Lys Val Ile Leu Lys Gly Asp Leu Glu Lys Thr Phe Val Trp Gln Asp
 115 120 125
 Thr Ala Val Val Leu Ser Gln Gly Val Gln Asn Leu Leu Gly Ile Thr
 130 135 140

<210>670

<211>165

<212>PRT

<213>Chlamydia pneumoniae

<400>670

Met Ser Leu Ser Lys Asn Ser His Lys Glu Asp Gln Leu Glu Glu Lys
 1 5 10 15
 Val Leu Val Val Asn Arg Cys Ser Lys Val Val Lys Gly Gly Arg Lys
 20 25 30
 Phe Ser Phe Ser Ala Leu Ile Leu Val Gly Asp Gly Lys Gly Arg Leu
 35 40 45
 Gly Tyr Gly Phe Ala Lys Ala Asn Glu Leu Thr Asp Ala Ile Arg Lys
 50 55 60
 Gly Gly Glu Ala Ala Lys Lys Asn Leu Met Lys Ile Glu Ala Leu Glu
 65 70 75 80
 Asp Gly Ser Ile Pro His Glu Val Leu Val His His Asp Gly Ala Gln
 85 90 95
 Leu Leu Leu Lys Pro Ala Lys Pro Gly Thr Gly Ile Val Ala Gly Ser
 100 105 110
 Arg Ile Arg Leu Ile Leu Glu Met Ala Gly Ile Lys Asp Ile Val Ala
 115 120 125
 Lys Ser Phe Gly Ser Asn Asn Pro Met Asn Gln Val Lys Ala Ala Phe
 130 135 140
 Lys Ala Leu Thr Gly Leu Ser Pro Arg Lys Asp Leu Leu Arg Arg Gly
 145 150 155 160
 Ala Ala Ile Asn Asp
 165

<210>671

<211>93

<212>PRT

<213>Chlamydia pneumoniae

<400>671

Leu Glu Trp Val Ser Glu Pro Leu Phe Lys Val His Phe Trp Ile Ser
 1 5 10 15
 Pro Leu Gly Phe Leu Thr Leu Gln Lys Phe Pro Ile Pro Ser Thr Leu
 20 25 30
 Gln Val Ser Val Glu Lys Asn Thr Leu Ile Ser Val Lys Gly Leu Asp
 35 40 45
 Lys Gln Leu Val Gly Glu Phe Ala Ala Ser Ile Arg Ala Lys Arg Pro
 50 55 60
 Pro Glu Pro Tyr Lys Gly Lys Gly Ile Arg Tyr Glu Asn Glu Tyr Val
 65 70 75 80
 Arg Arg Lys Ala Gly Lys Ala Ala Lys Thr Gly Lys Lys
 85 90

<210>672

<211>126

<212>PRT

<213>Chlamydia pneumoniae

<400>672

Met Ser Arg Lys Ala Arg Glu Pro Ile Leu Leu Pro Gln Gly Val Glu
 1 5 10 15
 Val Ser Ile Gln Asp Asp Lys Ile Ile Val Lys Gly Pro Lys Gly Ser
 20 25 30
 Leu Thr Gln Lys Ser Val Lys Glu Val Glu Ile Thr Leu Lys Asp Asn
 35 40 45
 Ser Ile Phe Val His Ala Ala Pro His Val Val Asp Arg Pro Ser Cys
 50 55 60
 Met Gln Gly Leu Tyr Trp Ala Leu Ile Ser Asn Met Val Gln Gly Val
 65 70 75 80
 His Leu Gly Phe Glu Lys Arg Leu Glu Met Ile Gly Val Gly Phe Arg
 85 90 95
 Ala Ser Val Gln Gly Ala Phe Leu Asp Leu Ser Ile Gly Val Ser His
 100 105 110
 Pro Thr Lys Ile Ser Tyr Pro Ile Tyr Ser Ser Gly Ile Ser
 115 120 125

<210>673

<211>133

<212>PRT

<213>Chlamydia pneumoniae

<400>673

Met Gly Met Thr Ser Asp Ser Ile Ala Asp Leu Leu Thr Arg Ile Arg
 1 5 10 15
 Asn Ala Leu Met Ala Glu His Leu Tyr Val Asp Val Glu His Ser Lys
 20 25 30
 Met Arg Glu Ala Ile Val Lys Ile Leu Lys His Lys Gly Phe Val Ala
 35 40 45
 His Tyr Leu Val Xaa Glu Xaa Asn Xaa Lys Arg Ala Met Arg Val Phe
 50 55 60
 Leu Gln Tyr Ser Asp Asp Arg Lys Pro Val Ile His Gln Leu Lys Arg
 65 70 75 80
 Val Ser Lys Pro Ser Arg Arg Val Tyr Val Ser Ala Ala Lys Ile Pro
 85 90 95
 Tyr Val Phe Gly Asn Met Gly Ile Ser Val Leu Ser Thr Ser Gln Gly
 100 105 110
 Val Met Glu Gly Ser Leu Ala Arg Ser Lys Asn Ile Gly Gly Glu Leu
 115 120 125
 Leu Cys Leu Val Trp
 130

<210>674

<211>180

<212>PRT

<213>Chlamydia pneumoniae

<400>674

Met Ser Arg Leu Lys Lys Phe Tyr Thr Glu Glu Ile Arg Lys Ser Leu
 1 5 10 15
 Phe Glu Lys Phe Gly Tyr Ala Asn Lys Met Gln Ile Pro Val Leu Lys
 20 25 30
 Lys Ile Val Leu Ser Met Gly Leu Ala Glu Ala Ala Lys Asp Lys Asn
 35 40 45
 Leu Phe Gln Ala His Leu Glu Glu Leu Thr Met Ile Ser Gly Gln Lys
 50 55 60
 Pro Leu Val Thr Lys Ala Arg Asn Ser Ile Ala Gly Phe Lys Leu Arg
 65 70 75 80
 Glu Gly Gln Gly Ile Gly Ala Lys Val Thr Leu Arg Gly Ile Arg Met
 85 90 95
 Tyr Asp Phe Met Asp Arg Phe Cys Asn Ile Val Ser Pro Arg Ile Arg
 100 105 110
 Asp Phe Arg Gly Phe Ser Asn Lys Gly Asp Gly Arg Gly Cys Tyr Ser
 115 120 125
 Val Gly Leu Asp Asp Gln Gln Ile Phe Pro Glu Ile Asn Leu Asp Arg
 130 135 140
 Val Lys Arg Thr Gln Gly Leu Asn Ile Thr Trp Val Thr Thr Ala Gln
 145 150 155 160
 Thr Asp Asp Glu Cys Thr Thr Leu Leu Glu Leu Met Gly Leu Arg Phe
 165 170 175
 Lys Lys Ala Gln
 180

<210>675

<211>111

<212>PRT

<213>Chlamydia pneumoniae

<400>675

Met Lys Lys Gln Asn Ile Arg Val Gly Asp Lys Val Phe Ile Leu Ala
 1 5 10 15
 Gly Asn Asp Lys Gly Lys Glu Gly Lys Val Leu Ser Leu Thr Glu Asp
 20 25 30
 Lys Val Val Val Glu Gly Val Asn Val Arg Ile Lys Asn Ile Lys Arg
 35 40 45
 Ser Gln Gln Asn Pro Lys Gly Lys Arg Ile Ser Ile Glu Ala Pro Ile
 50 55 60
 His Ile Ser Asn Val Arg Leu Thr Ile Ala Gly Glu Pro Ala Lys Leu
 65 70 75 80
 Ser Val Lys Val Thr Glu Gln Gly Arg Glu Leu Trp Gln Arg Arg Pro
 85 90 95
 Asp Gly Thr Ser Gln Leu Tyr Arg Leu Val Arg Gly Lys Lys Gly
 100 105 110

<210>676

<211>79

<212>PRT

<213>Chlamydia pneumoniae

<400>676

Met Ile Gln Gln Glu Ser Gln Leu Lys Val Ala Asp Asn Thr Gly Ala
 1 5 10 15
 Lys Lys Val Lys Cys Phe Lys Val Leu Gly Gly Ser Arg Arg Arg Tyr
 20 25 30
 Ala Thr Val Gly Asp Val Ile Val Cys Ser Val Arg Asp Val Glu Pro
 35 40 45
 Asn Ser Ser Ile Lys Lys Gly Arg Arg Tyr Gln Ser Cys Asp Arg Ala
 50 55 60
 His Thr Ser Ala Tyr Tyr Lys Lys Arg Trp Val Tyr Phe Lys Ile
 65 70 75

<210>677

<211>86

<212>PRT

<213>Chlamydia pneumoniae

<400>677

Met Ala Ser Glu Pro Arg Gly Ser Arg Lys Val Lys Ile Gly Val Val

1 5 10 15
 Val Ser Ala Lys Met Glu Lys Thr Val Val Val Arg Val Glu Arg Ile
 — 20 25 30
 Phe Ser His Pro Gln Tyr Leu Lys Val Val Arg Ser Ser Lys Lys Tyr
 35 40 45
 Tyr Ala His Thr Glu Leu Lys Val Ser Glu Gly Asp Lys Val Lys Ile
 50 55 60
 Gln Glu Thr Arg Pro Leu Ser Lys Leu Lys Arg Trp Arg Val Ile Glu
 65 70 75 80
 His Val Gly Val Val Ser
 85

<210>678

<211>138

<212>PRT

<213>Chlamydia pneumoniae

<400>678

Met Leu Met Pro Lys Arg Thr Lys Phe Arg Lys Gln Gln Xaa Gly Gln
 1 5 10 15
 Phe Ala Gly Leu Ser Lys Gly Ala Thr Phe Val Asp Phe Gly Glu Tyr
 20 25 30
 Ala Met Gln Thr Leu Glu Arg Gly Leu Val Thr Ser Arg Lys Ile Glu
 35 40 45
 Ala Cys Arg Val Ala Ile Asn Arg Tyr Leu Lys Arg Arg Gly Lys Val
 50 55 60
 Trp Ile Arg Ile Phe Pro Asp Lys Ser Val Thr Lys Lys Pro Ala Glu
 65 70 75 80
 Thr Arg Met Gly Lys Gly Lys Gly Ala Pro Asp His Trp Val Ala Val
 85 90 95
 Val Arg Pro Gly Arg Ile Leu Phe Glu Val Ala Asn Val Ser Lys Glu
 100 105 110
 Asp Ala Gln Asp Ala Leu Arg Arg Ala Ala Ala Lys Leu Gly Ile Lys
 115 120 125
 Thr Arg Phe Val Lys Arg Val Glu Arg Val
 130 135

<210>679

<211>223

<212>PRT

<213>Chlamydia pneumoniae

<400>679

Met Gly Gln Lys Gly Cys Pro Ile Gly Phe Arg Thr Gly Val Thr Lys
 1 5 10 15
 Lys Trp Arg Ser Leu Trp Tyr Gly Asn Lys Gln Glu Phe Gly Lys Phe
 20 25 30
 Leu Ile Glu Asp Val Arg Ile Arg Gln Phe Leu Arg Lys Lys Pro Ser
 35 40 45
 Cys Gln Gly Ala Ala Gly Phe Val Val Arg Arg Met Ser Gly Lys Ile
 50 55 60
 Glu Val Thr Ile Gln Thr Ala Arg Pro Gly Leu Val Ile Gly Lys Lys
 65 70 75 80
 Gly Ala Glu Val Asp Leu Leu Lys Glu Glu Leu Arg Ala Leu Thr Gly
 85 90 95
 Lys Glu Val Trp Leu Glu Ile Ala Glu Ile Lys Arg Pro Glu Leu Asn
 100 105 110
 Ala Lys Leu Val Ala Asp Asn Ile Ala Arg Gln Ile Glu Arg Arg Val
 115 120 125
 Ser Phe Arg Arg Ala Met Lys Lys Ala Met Gln Ser Val Met Asp Ala
 130 135 140
 Gly Ala Val Gly Val Lys Ile Gln Val Ser Gly Arg Leu Ala Gly Ala
 145 150 155 160
 Glu Ile Ala Arg Ser Glu Trp Tyr Lys Asn Gly Arg Val Pro Leu His
 165 170 175
 Thr Leu Arg Ala Asp Ile Asp Tyr Ala Thr Ala Cys Ala Glu Thr Thr
 180 185 190
 Tyr Gly Ile Ile Gly Ile Lys Val Trp Ile Asn Leu Gly Glu Asn Ser

195 200 205
 Ser Ser Thr Thr Pro Asn Asn Pro Ala Ala Pro Ser Ala Ala Ala
 210 215 220
 <210>680
 <211>115
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>680
 Arg Arg His Ser Met Phe Lys Ala Thr Ala Arg Tyr Ile Arg Val Gln
 1 5 10 15
 Pro Arg Lys Ala Arg Leu Ala Ala Gly Leu Met Arg Asn Leu Ser Val
 20 25 30
 Gln Glu Ala Glu Glu Gln Leu Gly Phe Ser Gln Leu Lys Ala Gly Arg
 35 40 45
 Cys Leu Lys Lys Val Leu Asn Ser Ala Val Ala Asn Ala Glu Leu His
 50 55 60
 Glu Asn Ile Lys Arg Glu Asn Leu Ser Val Thr Glu Val Arg Val Asp
 65 70 75 80
 Ala Gly Pro Val Tyr Lys Arg Ser Lys Ser Lys Ser Arg Gly Gly Arg
 85 90 95
 Ser Pro Ile Leu Lys Arg Thr Ser His Leu Thr Val Ile Val Gly Glu
 100 105 110
 Lys Glu Arg
 115
 <210>681
 <211>284
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>681
 Met Phe Lys Lys Phe Lys Pro Val Thr Pro Gly Thr Arg Gln Leu Val
 1 5 10 15
 Leu Pro Ala Phe Asp Glu Leu Thr Thr Arg Gly Glu Leu Arg Gly Thr
 20 25 30
 Lys Ser Lys Arg Ser Leu Arg Pro Asn Lys Lys Leu Ser Phe Phe Lys
 35 40 45
 Lys Ser Ser Gly Gly Arg Asp Asn Leu Gly His Ile Ser Cys Arg His
 50 55 60
 Arg Gly Gly Gly Ala Lys Gln Leu Tyr Arg Val Val Asp Phe Lys Arg
 65 70 75 80
 Asn Lys Asp Gly Ile Thr Ala Lys Val Val Thr Val Glu Tyr Asp Pro
 85 90 95
 Asn Arg Ser Ala Tyr Ile Ala Leu Leu Ser Tyr Glu Asp Gly Glu Lys
 100 105 110
 Arg Tyr Ile Leu Ala Pro Lys Gly Ile Gln Arg Gly Asp Val Val Val
 115 120 125
 Ser Gly Glu Gly Ser Pro Phe Lys Pro Gly Cys Cys Met Thr Leu Lys
 130 135 140
 Ser Ile Pro Leu Gly Leu Ser Val His Asn Ile Glu Met Arg Pro Ser
 145 150 155 160
 Ser Gly Gly Lys Leu Val Arg Ser Ala Gly Leu Ala Ala Gln Val Ile
 165 170 175
 Ala Lys Ser Pro Gly Tyr Val Thr Leu Lys Met Pro Ser Gly Glu Phe
 180 185 190
 Arg Met Leu Asn Glu Gly Cys Arg Ala Thr Ile Gly Glu Val Ser Asn
 195 200 205
 Ala Asp His Asn Leu Arg Val Asp Gly Lys Ala Gly Arg Arg Arg Trp
 210 215 220
 Met Gly Val Arg Pro Thr Val Arg Gly Thr Ala Met Asn Pro Val Asp
 225 230 235 240
 His Pro His Gly Gly Gly Glu Gly Arg His Asn Gly Tyr Ile Pro Arg
 245 250 255
 Thr Pro Trp Gly Lys Val Thr Lys Gly Leu Lys Thr Arg Asp Lys Asn
 260 265 270
 Lys Ser Asn Lys Trp Ile Val Lys Asp Arg Arg Lys

275 280
 <210>682
 <211>112
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>682
 Asp Met Lys Asp Pro Tyr Asp Val Ile Lys Arg His Tyr Val Thr Glu
 1 5 10 15
 Lys Ala Lys Met Leu Glu His Leu Ser Ala Gly Thr Gly Glu Gly Lys
 20 25 30
 Lys Lys Gly Ser Phe Cys Lys Asp Pro Lys Phe Val Phe Ile Val Ser
 35 40 45
 His Asp Ala Thr Lys Pro Leu Ile Ala Gln Ala Leu Glu Ala Ile Tyr
 50 55 60
 Val Asp Lys Asn Val Lys Val Lys Ser Val Asn Thr Ile Asn Val Lys
 65 70 75 80
 Pro Gln Pro Ala Arg Met Phe Arg Gly Arg Arg Lys Gly Lys Thr Ser
 85 90 95
 Gly Phe Lys Lys Ala Ile Val Thr Phe Tyr Gln Gly His Ser Val Gly
 100 105 110

<210>683
 <211>224
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>683
 Trp Phe Tyr Tyr Gln Asn Leu Asp Phe Ser Gly Asn Lys Ile Gly Glu
 1 5 10 15
 Val Glu Val Ala Asp Ser Leu Phe Ala Asp Glu Gly Asp Gly Leu Gln
 20 25 30
 Leu Ile Lys Asp Tyr Ile Val Ala Ile Arg Ala Asn Lys Arg Gln Trp
 35 40 45
 Ser Ala Cys Thr Arg Asn Arg Ser Glu Val Ser His Ser Thr Lys Lys
 50 55 60
 Pro Phe Lys Gln Lys Gly Thr Gly Asn Ser Arg Gln Gly Cys Leu Ala
 65 70 75 80
 Ser Pro Gln Phe Arg Gly Gly Gly Ile Val Phe Gly Pro Lys Pro Lys
 85 90 95
 Phe Asn Gln His Val Arg Ile Asn Arg Lys Glu Arg Lys Ala Ala Ile
 100 105 110
 Arg Leu Leu Leu Ala Gln Lys Ile Gln Thr Asn Lys Leu Thr Val Val
 115 120 125
 Asp Asp Thr Val Phe Val Asp Ala Leu Thr Ala Pro Lys Thr Gln Ser
 130 135 140
 Ala Leu Arg Phe Leu Lys Asp Cys Asn Val Glu Cys Arg Ser Ile Leu
 145 150 155 160
 Phe Ile Asp His Leu Asp His Val Glu Lys Asn Glu Asn Leu Arg Leu
 165 170 175
 Ser Leu Arg Asn Leu Thr Ala Val Lys Gly Phe Val Tyr Gly Ile Asn
 180 185 190
 Ile Asn Gly Tyr Asp Leu Ala Ser Ala His Asn Ile Val Ile Ser Lys
 195 200 205
 Lys Ala Leu Gln Glu Leu Val Glu Arg Leu Val Ser Glu Thr Lys Asp
 210 215 220

<210>684
 <211>235
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>684
 Leu Phe Leu Gln Glu Glu Ser Lys Ser Leu Leu Leu Met Asp Lys Phe
 1 5 10 15
 Met Arg Ser His Ile Ser Val Met Gly Lys Lys Glu Gly Met Ile His
 20 25 30
 Ile Phe Asp Lys Asp Gly Ser Leu Val Ala Cys Ser Val Ile Arg Val
 35 40 45

Glu Pro Asn Val Val Thr Gln Ile Lys Thr Lys Glu Ser Asp Gly Tyr
 50 55 60
 Phe Ser Leu Gln Ile Gly Ala Glu Glu Met Asn Ala Pro Ala His Thr
 65 70 75 80
 Ile Thr Lys Arg Val Ser Lys Pro Lys Leu Gly His Leu Arg Lys Ala
 85 90 95
 Gly Gly Arg Val Phe Arg Phe Leu Lys Glu Val Arg Gly Ser Glu Glu
 100 105 110
 Ala Leu Asn Gly Val Ser Leu Gly Asp Ala Phe Gly Leu Glu Val Phe
 115 120 125
 Glu Asp Val Ser Ser Val Asp Val Arg Gly Ile Ser Lys Gly Lys Gly
 130 135 140
 Phe Gln Gly Val Met Lys Lys Phe Gly Phe Arg Gly Gly Pro Gly Ser
 145 150 155 160
 His Gly Ser Gly Phe His Arg His Ala Gly Ser Ile Gly Met Arg Ser
 165 170 175
 Thr Pro Gly Arg Cys Phe Pro Gly Ser Lys Arg Pro Ser His Met Gly
 180 185 190
 Ala Glu Asn Val Thr Val Lys Asn Leu Glu Val Ile Lys Val Asp Leu
 195 200 205
 Glu Lys Lys Val Leu Leu Val Lys Gly Ala Ile Pro Gly Ala Arg Gly
 210 215 220
 Ser Ile Val Ile Val Lys His Ser Ser Arg Thr
 225 230 235

<210>685

<211>100

<212>PRT

<213>Chlamydia pneumoniae

<400>685

Lys Val Ala Ser Lys Lys Phe Phe Arg Ser Asp Phe Phe Lys Ile Lys
 1 5 10 15
 Ile Lys Leu Ala Tyr Leu Pro Asp Phe Val Phe Cys His Met Leu Tyr
 20 25 30
 Lys Pro Ile Pro Ala Asp Ala Ala Val Lys Ala Pro Glu Ile Ala Ala
 35 40 45
 Glu Gln Ala Thr Val Ile Gly Lys Gly Met Ser Leu Thr Pro Ser Thr
 50 55 60
 Thr Asn Ser Lys Ala Phe Ser Arg Arg Val Lys Thr Phe Leu Phe Arg
 65 70 75 80
 Val Ala Thr Cys Ser Leu Arg Asn Ala Leu Ser Ala Leu Arg Ile Thr
 85 90 95
 Ser Pro Leu Asn
 100

<210>686

<211>334

<212>PRT

<213>Chlamydia pneumoniae

<400>686

Lys Trp Arg Leu Thr Gln Leu Asp Arg Gln Glu Val Gln Gln Val Arg
 1 5 10 15
 Cys Cys Cys Gln Leu Pro Lys Asn Gln Arg Leu Ser Ala Pro Leu Leu
 20 25 30
 Arg Lys Gly Phe Ile Val Phe Asn Asn Phe Phe Thr Asn Pro Gly Asn
 35 40 45
 Lys Leu Ala Lys Phe Val Gly Ala Thr Lys Ser Leu Asp Lys Cys Phe
 50 55 60
 Lys Leu Ser Lys Ala Val Ser Asp Cys Val Val Gly Ser Leu Glu Glu
 65 70 75 80
 Ala Gly Cys Thr Gly Asp Ala Leu Thr Ser Ala Arg Asn Ala Gln Gly
 85 90 95
 Met Leu Lys Thr Thr Arg Glu Val Val Ala Leu Ala Asn Val Leu Asn
 100 105 110
 Gly Ala Val Pro Ser Ile Val Asn Ser Thr Gln Arg Cys Tyr Gln Tyr
 115 120 125

Thr Arg Gln Ala Phe Glu Leu Gly Ser Lys Thr Lys Glu Arg Lys Thr
 130 135 140
 Pro Gly Glu Tyr Ser Lys Met Leu Leu Thr Arg Gly Asp Tyr Leu Leu
 145 150 155 160
 Ala Ala Ser Arg Glu Ala Cys Thr Ala Val Gly Ala Thr Thr Tyr Ser
 165 170 175
 Ala Thr Phe Gly Val Leu Arg Pro Leu Met Leu Ile Asn Lys Leu Thr
 180 185 190
 Ala Lys Pro Phe Leu Asp Lys Ala Thr Val Gly Asn Phe Gly Thr Ala
 195 200 205
 Val Ala Gly Ile Met Thr Ile Asn His Met Ala Gly Val Ala Gly Ala
 210 215 220
 Val Gly Gly Ile Ala Leu Glu Gln Lys Leu Phe Lys Arg Ala Lys Glu
 225 230 235 240
 Ser Leu Tyr Asn Glu Arg Cys Ala Leu Glu Asn Gln Gln Ser Gln Leu
 245 250 255
 Ser Gly Asp Val Ile Leu Ser Ala Glu Arg Ala Leu Arg Lys Glu His
 260 265 270
 Val Ala Thr Leu Lys Arg Asn Val Leu Thr Leu Leu Glu Lys Ala Leu
 275 280 285
 Glu Leu Val Val Asp Gly Val Lys Leu Ile Pro Leu Pro Ile Thr Val
 290 295 300
 Ala Cys Ser Ala Ala Ile Ser Gly Ala Leu Thr Ala Ala Ser Ala Gly
 305 310 315 320
 Ile Gly Leu Tyr Ser Ile Trp Gln Lys Thr Lys Ser Gly Lys
 325 330

<210>687

<211>321

<212>PRT

<213>Chlamydia pneumoniae

<400>687

Leu Asn Leu Lys Val Val Tyr Phe Gly Thr Pro Thr Phe Ala Ala Thr
 1 5 10 15
 Val Leu Gln Asp Leu Leu His His Lys Ile Gln Ile Thr Ala Val Val
 20 25 30
 Thr Arg Val Asp Lys Pro Gln Lys Arg Ser Ala Gln Leu Ile Pro Ser
 35 40 45
 Pro Val Lys Thr Ile Ala Leu Thr His Gly Leu Pro Leu Leu Gln Pro
 50 55 60
 Ser Lys Ala Ser Asp Pro Gln Phe Ile Glu Glu Leu Arg Ala Phe Asn
 65 70 75 80
 Ala Asp Val Phe Ile Val Val Ala Tyr Gly Ala Ile Leu Arg Gln Ile
 85 90 95
 Val Leu Asp Ile Pro Arg Tyr Gly Cys Tyr Asn Leu His Ala Gly Leu
 100 105 110
 Leu Pro Ala Tyr Arg Gly Ala Ala Pro Ile Gln Arg Cys Ile Met Glu
 115 120 125
 Gly Ala Thr Glu Ser Gly Asn Thr Val Ile Arg Met Asp Ala Gly Met
 130 135 140
 Asp Thr Gly Asp Met Ala Asn Ile Thr Arg Val Pro Ile Gly Pro Asp
 145 150 155 160
 Met Thr Ser Gly Glu Leu Ala Asp Ala Leu Ala Ser Gln Gly Ala Glu
 165 170 175
 Val Leu Ile Lys Thr Leu Gln Gln Ile Glu Ser Gly Gln Leu Gln Leu
 180 185 190
 Val Ser Gln Asp Ala Ala Leu Ala Thr Ile Ala Pro Lys Leu Ser Lys
 195 200 205
 Glu Glu Gly Gln Val Pro Trp Asp Lys Pro Ala Lys Glu Ala Tyr Ala
 210 215 220
 His Ile Arg Gly Val Thr Pro Ala Pro Gly Ala Trp Thr Leu Phe Ser
 225 230 235 240
 Phe Ser Glu Lys Ala Pro Lys Arg Leu Met Ile Arg Lys Ala Ser Leu
 245 250 255
 Leu Ala Glu Ala Gly Arg Tyr Gly Ala Pro Gly Thr Val Val Val Thr

PCT/IB98/01890

```
<210>688
<211>279
<212>PRT
<213>Chlamydia pneumoniae
<400>688
```

```
<210>689
<211>153
<212>PRT
<213>Chlamydia pneumoniae
<400>689
```

Met	Asn	Gln	Pro	Ser	Val	Ile	Lys	Leu	Arg	Glu	Leu	Leu	Asp	Leu	Leu
1				5					10					15	
Pro	His	Arg	Tyr	Pro	Phe	Leu	Leu	Val	Asp	Lys	Val	Leu	Ser	Tyr	Asp
			20					25					30		
Ile	Glu	Ala	Arg	Ser	Ile	Thr	Ala	Gln	Lys	Asn	Val	Thr	Ile	Asn	Glu
		35					40					45			
Pro	Phe	Phe	Met	Gly	His	Phe	Pro	Asn	Ala	Pro	Ile	Met	Pro	Gly	Val
	50					55					60				
Leu	Ile	Leu	Glu	Ala	Leu	Ala	Gln	Ala	Ala	Gly	Val	Leu	Ile	Gly	Leu

65 70 75 80
 Val Leu Glu Asn Asp Arg Asn Lys Arg Ile Ala Leu Phe Leu Gly Ile
 85 90 95
 Gln Lys Ala Lys Phe Arg Gln Ala Val Arg Pro Gly Asp Val Leu Thr
 100 105 110
 Leu Gln Ala Asp Phe Ser Leu Ile Ser Ser Lys Gly Gly Lys Ala Trp
 115 120 125
 Ala Gln Ala Arg Val Asp Ser Gln Leu Val Thr Glu Ala Glu Leu Ser
 130 135 140
 Phe Ala Leu Val Asp Lys Glu Ser Ile
 145 150

<210>690

<211>166

<212>PRT

<213>Chlamydia pneumoniae

<400>690

Ser Ile Lys Gln Val Phe Val Asn Lys Lys Ile Xaa Val Ser Ile Ala
 1 5 10 15
 Arg Leu Thr Arg Pro Val Tyr Tyr Gln His Gln Asp Ile Phe Leu Ala
 20 25 30
 Ala Phe Pro Ser Asp Glu Leu Lys Ile Ser Tyr Thr Leu His Tyr Pro
 35 40 45
 Gln Ser Ser Thr Ile Gly Thr Gln Tyr Lys Ser Leu Val Ile Asn Glu
 50 55 60
 Glu Ser Phe Arg Gln Glu Ile Ala Pro Cys Arg Thr Phe Ala Leu Tyr
 65 70 75 80
 Asn Glu Leu Cys Phe Leu Met Glu Lys Gly Leu Ile Gly Gly Gly Cys
 85 90 95
 Leu Asp Asn Ala Val Val Phe Lys Asp Asp Gly Ile Ile Ser Arg Gly
 100 105 110
 Gln Leu Arg Phe Ala Asp Glu Pro Val Arg His Lys Ile Leu Asp Leu
 115 120 125
 Ile Gly Asp Leu Ser Leu Val Gly Arg Pro Phe Val Ala His Val Leu
 130 135 140
 Ala Val Gly Ser Gly His Ser Ser Asn Ile Ala Phe Gly Lys Lys Ile
 145 150 155 160
 Leu Glu Ala Leu Glu Leu
 165

<210>691

<211>152

<212>PRT

<213>Chlamydia pneumoniae

<400>691

Met Leu Glu Arg Thr Gln Arg Thr Leu Lys Arg Glu Val Arg Tyr Ser
 1 5 10 15
 Gly Val Gly Ile His Leu Gly Lys Ser Ser Thr Leu His Leu Gln Pro
 20 25 30
 Ala Gln Thr Asn Thr Gly Ile Val Phe Gln Arg Gln Ser Ala Ser Gly
 35 40 45
 Asn Tyr Glu Asn Val Pro Ala Leu Leu Asp His Val Tyr Thr Thr Gly
 50 55 60
 Arg Ser Thr Thr Leu Ser Arg Gly Ser Ala Val Ile Ala Thr Val Glu
 65 70 75 80
 His Leu Met Ala Ala Leu Arg Ser Asn Asn Ile Asp Asn Leu Ile Ile
 85 90 95
 Gln Cys Ser Gly Glu Glu Ile Pro Ile Gly Asp Gly Ser Ser Asn Val
 100 105 110
 Phe Val Glu Leu Ile Asp Gln Ala Gly Ile Cys Glu Gln Glu Asp Xaa
 115 120 125
 Gly Phe His Cys Glu Thr Asn Thr Ser Cys Ile Leu Ser Thr Ser Gly
 130 135 140
 His Phe Phe Ser Ser Phe Ser Leu
 145 150

<210>692

<211>541

<212>PRT

<213>Chlamydia pneumoniae

<400>692

```

Val Leu Arg Ile Phe Cys Phe Val Ile Ser Trp Cys Leu Ile Ala Phe
 1          5          10          15
Ala Gln Pro Asp Leu Ser Gly Phe Val Ser Ile Leu Gly Ala Ala Cys
          20          25          30
Gly Tyr Gly Phe Phe Trp Tyr Ser Leu Glu Pro Leu Lys Lys Pro Ser
          35          40          45
Leu Pro Leu Arg Thr Leu Phe Val Ser Cys Phe Phe Trp Ile Phe Thr
          50          55          60
Ile Glu Gly Ile His Phe Ser Trp Met Leu Ser Asp Gln Tyr Ile Gly
          65          70          75          80
Lys Leu Ile Tyr Leu Val Trp Leu Thr Leu Ile Thr Ile Leu Ser Val
          85          90          95
Leu Phe Ser Gly Phe Ser Cys Leu Leu Val Ala Ile Val Arg Gln Lys
          100          105          110
Arg Thr Ala Phe Leu Trp Ser Leu Pro Gly Val Trp Val Ala Ile Glu
          115          120          125
Met Leu Arg Phe Tyr Gly Ile Phe Ser Gly Met Ser Phe Asp Tyr Leu
          130          135          140
Gly Trp Pro Met Thr Ala Ser Ala Tyr Gly Arg Gln Phe Gly Gly Phe
          145          150          155          160
Leu Gly Trp Ala Gly Gln Ser Phe Ala Val Ile Ala Val Asn Met Ser
          165          170          175
Phe Tyr Cys Leu Leu Lys Lys Pro His Ala Lys Met Leu Trp Val
          180          185          190
Leu Thr Leu Leu Leu Pro Tyr Thr Phe Gly Ala Ile His Tyr Glu Tyr
          195          200          205
Leu Lys His Ala Phe Gln Gln Asp Lys Arg Ala Leu Arg Val Ala Val
          210          215          220
Val Gln Pro Ala His Pro Pro Ile Arg Pro Lys Leu Lys Ser Pro Ile
          225          230          235          240
Val Val Trp Glu Gln Leu Leu Gln Leu Val Ser Pro Ile Gln Gln Pro
          245          250          255
Ile Asp Leu Leu Ile Phe Pro Glu Val Val Val Pro Phe Gly Lys His
          260          265          270
Arg Gln Val Tyr Pro Tyr Glu Ser Cys Ala His Leu Leu Ser Ser Phe
          275          280          285
Ala Pro Leu Pro Glu Gly Lys Ala Phe Leu Ser Asn Ser Asp Cys Ala
          290          295          300
Thr Ala Leu Ser Gln His Phe Gln Cys Pro Val Ile Ile Gly Leu Glu
          305          310          315          320
Arg Trp Val Lys Lys Glu Asn Val Leu Tyr Trp Tyr Asn Ser Ala Glu
          325          330          335
Val Ile Ser His Lys Gly Ile Ser Val Gly Tyr Asp Lys Arg Ile Leu
          340          345          350
Val Pro Gly Gly Glu Tyr Ile Pro Gly Gly Lys Phe Gly Ser Leu Ile
          355          360          365
Cys Arg Gln Leu Phe Pro Lys Tyr Ala Leu Gly Cys Lys Arg Leu Pro
          370          375          380
Gly Arg Arg Ser Gly Val Val Gln Val Arg Gly Leu Pro Arg Ile Gly
          385          390          395          400
Ile Thr Ile Cys Tyr Glu Glu Thr Phe Gly Tyr Arg Leu Gln Ser Tyr
          405          410          415
Lys Arg Gln Gly Ala Glu Leu Leu Val Asn Leu Thr Asn Asp Gly Trp
          420          425          430
Tyr Pro Glu Ser Arg Leu Pro Lys Val His Phe Leu His Gly Met Leu
          435          440          445
Arg Asn Gln Glu Phe Gly Met Pro Cys Val Arg Ala Cys Gln Thr Gly
          450          455          460
Val Thr Ala Thr Val Asp Ser Leu Gly Arg Ile Leu Lys Ile Leu Pro
          465          470          475          480

```

PCT/IB98/01890

BNSDOCID <WO 9927105A2 1 >

Pro Leu Ala Tyr Leu Gln Trp Ala Ser Lys Met Asp Phe Asp Ser Asp
 210 215 220
 Leu Leu Phe Ser Ile Arg His Glu Ile Lys His Arg Gln Lys Gly Thr
 225 230 235 240
 Gly Phe Ser Gln Val Asn Asn Pro Phe Met Glu Leu
 245 250

<210>695

<211>142

<212>PRT

<213>Chlamydia pneumoniae

<400>695

Pro Met Gly Arg Tyr Arg Arg Val Ser His Ser Ser Gln Glu Thr Leu
 1 5 10 15
 Leu Leu Gly Thr Glu Leu Gly Gln Val Leu Val Pro Gly Ala Val Leu
 20 25 30
 Leu Leu Phe Gly Asp Tyr Gly Ala Gly Lys Thr Glu Phe Val Arg Gly
 35 40 45
 Ile Val Ser Gly Tyr Leu Gly Asp Thr Ile Ala Glu Val Ala Ser
 50 55 60
 Pro Ser Phe Ser Ile Leu His Val Tyr Gly Asn Glu Pro Lys Arg Leu
 65 70 75 80
 Cys His Tyr Asp Leu Tyr Arg Ile Asp Gln Lys Asn Gln Glu Tyr Ile
 85 90 95
 Phe Gln Asp Ala Glu Glu Asp Asp Val Leu Cys Ile Glu Trp Ala Asp
 100 105 110
 Arg Leu Pro Lys Pro Arg Phe Cys Asp Thr Ile Asn Ile Tyr Ile Thr
 115 120 125
 Met Gln Thr Asn Met Glu Arg Glu Ile Ile Ile Glu Lys Arg
 130 135 140

<210>696

<211>191

<212>PRT

<213>Chlamydia pneumoniae

<400>696

Phe Ser Lys Leu Xaa Glu Asp Ala Val Arg Ile Leu Glu Gln Asp Lys
 1 5 10 15
 Lys Ile Trp Arg Glu Thr Glu Ile Gln Ile Ser Ser Glu Lys Pro Gln
 20 25 30
 Val Asn Glu Asn Thr Lys Arg Ile Tyr Ile Cys Pro Phe Thr Gly Lys
 35 40 45
 Val Phe Ala Asp Asn Val Tyr Ala Asn Pro Gln Asp Ala Ile Tyr Asp
 50 55 60
 Trp Leu Ser Ser Cys Pro Gln Asn Met Glu Lys Gln Gly Gly Val Arg
 65 70 75 80
 Ile Lys Arg Phe Leu Val Ser Glu Asp Pro Asp Val Ile Lys Glu Tyr
 85 90 95
 Ala Val Pro Pro Lys Glu Pro Ile Ile Lys Thr Val Phe Ala Ser Ala
 100 105 110
 Ile Thr Gly Lys Leu Phe His Ser Leu Pro Pro Leu Leu Glu Asp Phe
 115 120 125
 Ile Ser Ser Tyr Leu Arg Pro Met Thr Leu Glu Glu Val Gln Asn Gln
 130 135 140
 Thr Lys Phe Gln Leu Glu Ser Ser Phe Leu Ser Leu Leu Gln Asp Ala
 145 150 155 160
 Leu Val Glu Asp Lys Ile Ala Ala Phe Ile Glu Ser Leu Ala Asp Asp
 165 170 175
 Thr Ala Phe His Val Tyr Ile Ser Gln Trp Val Asp Thr Glu Glu
 180 185 190

<210>697

<211>102

<212>PRT

<213>Chlamydia pneumoniae

<400>697

Met Val Lys Ile Ile Ser Ser Glu Asn Phe Asp Ser Phe Ile Ala Ser

1 5 10 15
 Gly Leu Val Leu Val Asp Phe Phe Ala Glu Trp Cys Gly Pro Cys Arg
 — 20 25 30
 Met Leu Thr Pro Ile Leu Glu Asn Leu Ala Ala Glu Leu Pro His Val
 35 40 45
 Thr Ile Gly Lys Ile Asn Ile Asp Glu Asn Ser Lys Pro Ala Glu Thr
 50 55 60
 Tyr Glu Val Ser Ser Ile Pro Thr Leu Ile Leu Phe Lys Asp Gly Asn
 65 70 75 80
 Glu Val Ala Arg Val Val Gly Leu Lys Asp Lys Glu Phe Leu Thr Asn
 85 90 95
 Leu Ile Asn Lys His Ala
 100

<210>698

<211>156

<212>PRT

<213>Chlamydia pneumoniae

<400>698

Met Arg Val Val Leu His Cys Pro Asp Ile Pro Gln Asn Thr Gly Asn
 1 5 10 15
 Ile Gly Arg Thr Cys Val Ala Leu Gly Ala Glu Leu Ile Leu Val Arg
 20 25 30
 Pro Leu Gly Phe Ser Leu Ala Asp Lys Phe Val Lys Arg Ala Gly Met
 35 40 45
 Asp Tyr Trp Asp Lys Leu Gln Leu Thr Val Val Asp Ser Ile Glu Glu
 50 55 60
 Ala Leu His Asp Val Pro Glu Asp Gln Ile Phe Cys Leu Cys Thr Lys
 65 70 75 80
 Gly Ser Ala Ser Tyr Thr Glu Phe Ser Leu Pro Ser Ser Gly Thr Tyr
 85 90 95
 Val Phe Gly Ser Glu Ser Lys Gly Leu Pro Lys Glu Ile Leu Lys Lys
 100 105 110
 Tyr Tyr Lys Asn Cys Leu Arg Ile Pro Met Gln Gln Asp Ile Arg Ser
 115 120 125
 Leu Asn Leu Ala Thr Ser Val Gly Ile Val Leu Tyr Glu Val Val Arg
 130 135 140
 Gln Lys Thr Val Ala Leu Gln Lys Asn Pro Thr Val
 145 150 155

<210>699

<211>258

<212>PRT

<213>Chlamydia pneumoniae

<400>699

Met Asn Arg Arg Trp Asn Leu Val Leu Ala Thr Val Ala Leu Ala Leu
 1 5 10 15
 Ser Val Ala Ser Cys Asp Val Arg Ser Lys Asp Lys Asp Lys Asp Gln
 20 25 30
 Gly Ser Leu Val Glu Tyr Lys Asp Asn Lys Asp Thr Asn Asp Ile Glu
 35 40 45
 Leu Ser Asp Asn Gln Lys Leu Ser Arg Thr Phe Gly His Leu Leu Ala
 50 55 60
 Arg Gln Leu Arg Lys Ser Glu Asp Met Phe Phe Asp Ile Ala Glu Val
 65 70 75 80
 Ala Lys Gly Leu Gln Ala Glu Leu Val Cys Lys Ser Ala Pro Leu Thr
 85 90 95
 Glu Thr Glu Tyr Glu Glu Lys Met Ala Glu Val Gln Lys Leu Val Phe
 100 105 110
 Glu Lys Lys Ser Lys Glu Asn Leu Ser Leu Ala Glu Lys Phe Leu Lys
 115 120 125
 Glu Asn Ser Lys Asn Ala Gly Val Val Glu Val Gln Pro Ser Lys Leu
 130 135 140
 Gln Tyr Lys Ile Ile Lys Glu Gly Ala Gly Lys Ala Ile Ser Gly Lys
 145 150 155 160
 Pro Ser Ala Leu Leu His Tyr Lys Gly Ser Phe Ile Asn Gly Gln Val

PCT/IB98/01890

```
<210>700
<211>584
<212>PRT
<213>Chlamydia pneumoniae
<400>700
```

Met	Lys	Tyr	Arg	Thr	His	Arg	Cys	Asn	Glu	Leu	Thr	Ser	Asn	His	Ile
1				5					10					15	
Gly	Glu	Asn	Val	Gln	Leu	Ala	Gly	Trp	Val	His	Arg	Tyr	Arg	Asn	His
		20						25					30		
Gly	Gly	Val	Val	Phe	Ile	Xaa	Leu	Arg	Asp	Arg	Phe	Gly	Ile	Thr	Gln
		35					40					45			
Ile	Val	Cys	Arg	Glu	Asp	Glu	Gln	Pro	Glu	Leu	His	Gln	Arg	Leu	Asp
	50					55					60				
Ala	Val	Arg	Ser	Glu	Trp	Val	Leu	Ser	Val	Arg	Gly	Lys	Val	Cys	Pro
65					70					75					80
Arg	Leu	Ala	Gly	Met	Glu	Asn	Pro	Asn	Leu	Ala	Thr	Gly	His	Ile	Glu
				85					90					95	
Val	Glu	Val	Ala	Ser	Phe	Glu	Val	Leu	Ser	Lys	Ser	Gln	Asn	Leu	Pro
		100						105					110		
Phe	Ser	Ile	Ala	Asp	Asp	His	Ile	Asn	Val	Asn	Glu	Glu	Leu	Arg	Leu
		115					120					125			
Glu	Tyr	Arg	Tyr	Leu	Asp	Met	Arg	Arg	Gly	Asp	Ile	Ile	Glu	Lys	Leu
		130			135						140				
Leu	Cys	Arg	His	Gln	Val	Met	Leu	Ala	Cys	Arg	Asn	Phe	Met	Asp	Ala
145					150					155					160
Gln	Gly	Phe	Thr	Glu	Ile	Val	Thr	Pro	Val	Leu	Gly	Lys	Ser	Thr	Pro
				165					170					175	
Glu	Gly	Ala	Arg	Asp	Tyr	Leu	Val	Pro	Ser	Arg	Ile	Tyr	Pro	Gly	Lys
		180						185					190		
Phe	Tyr	Ala	Leu	Pro	Gln	Ser	Pro	Gln	Leu	Phe	Lys	Gln	Leu	Leu	Met
		195					200					205			
Val	Gly	Gly	Leu	Asp	Arg	Tyr	Phe	Gln	Ile	Ala	Thr	Cys	Phe	Arg	Asp
		210				215					220				
Glu	Asp	Leu	Arg	Ala	Asp	Arg	Gln	Pro	Glu	Phe	Ala	Gln	Ile	Asp	Ile
225					230					235					240
Glu	Met	Ser	Phe	Gly	Asp	Thr	Gln	Asp	Leu	Leu	Pro	Ile	Ile	Glu	Gln
				245					250					255	
Leu	Val	Ala	Thr	Leu	Phe	Ala	Thr	Gln	Gly	Ile	Glu	Ile	Pro	Leu	Pro
		260						265					270		
Leu	Ala	Lys	Met	Thr	Tyr	Gln	Glu	Ala	Lys	Asp	Ser	Tyr	Gly	Thr	Asp
		275					280					285			
Lys	Pro	Asp	Leu	Arg	Phe	Asp	Leu	Lys	Leu	Lys	Asp	Cys	Arg	Asp	Tyr
		290				295					300				
Ala	Lys	Arg	Ser	Ser	Phe	Ser	Ile	Phe	Leu	Asp	Gln	Leu	Ala	His	Gly
305					310					315					320
Gly	Thr	Ile	Lys	Gly	Phe	Cys	Val	Pro	Gly	Gly	Ala	Thr	Met	Ser	Arg
				325					330					335	
Lys	Gln	Leu	Asp	Gly	Tyr	Thr	Glu</								

Ala Lys Phe Met Asp Glu Glu Val Phe His Glu Leu Phe Ala Tyr Phe
 370 375 380
 Asp Ala Lys-Asp Gln Asp Ile Leu Leu Leu Ile Ala Ala Pro Glu Ser
 385 390 395 400
 Val Ala Asn Gln Ser Leu Asp His Leu Arg Arg Leu Ile Ala Lys Glu
 405 410 415
 Arg Glu Leu Tyr Ser Asp Asn Gln Tyr Asn Phe Val Trp Ile Thr Asp
 420 425 430
 Phe Pro Leu Phe Ser Leu Glu Asp Gly Lys Ile Val Ala Glu His His
 435 440 445
 Pro Phe Thr Ala Pro Leu Glu Glu Asp Ile Pro Leu Leu Glu Thr Asp
 450 455 460
 Pro Leu Ala Val Arg Ser Ser Ser Tyr Asp Leu Val Leu Asn Gly Tyr
 465 470 475 480
 Glu Ile Ala Ser Gly Ser Gln Arg Ile His Asn Pro Asp Leu Gln Ser
 485 490 495
 Gln Ile Phe Thr Ile Leu Lys Ile Ser Pro Glu Ser Ile Gln Glu Lys
 500 505 510
 Phe Gly Phe Phe Ile Lys Ala Leu Ser Phe Gly Thr Pro Pro His Leu
 515 520 525
 Gly Ile Ala Leu Gly Leu Asp Arg Leu Val Met Val Leu Thr Ala Ala
 530 535 540
 Glu Ser Ile Arg Glu Val Ile Ala Phe Pro Lys Thr Gln Lys Ala Ser
 545 550 555 560
 Asp Leu Met Met Asn Ala Pro Ser Glu Ile Met Ser Ser Gln Leu Lys
 565 570 575
 Glu Leu Ser Ile Lys Val Ala Phe
 580

<210>701

<211>430

<212>PRT

<213>Chlamydia pneumoniae

<400>701

Val Thr Val Thr Leu Pro Lys Gly Val Phe Asp Ile Phe Pro Tyr Leu
 1 5 10 15
 Ala Asp Ala Lys Gln Leu Trp Arg His Thr Ser Leu Trp His Ser Val
 20 25 30
 Glu Lys Ala Ile His Thr Val Cys Met Leu Tyr Gly Phe Cys Glu Ile
 35 40 45
 Arg Thr Pro Ile Phe Glu Lys Ser Glu Val Phe Leu His Val Gly Glu
 50 55 60
 Glu Ser Asp Val Val Lys Lys Glu Val Tyr Ser Phe Leu Asp Arg Lys
 65 70 75 80
 Gly Arg Ser Met Thr Leu Arg Pro Glu Gly Thr Ala Ala Val Val Arg
 85 90 95
 Ser Phe Leu Glu His Gly Ala Ser His Arg Ser Asp Asn Lys Phe Tyr
 100 105 110
 Tyr Ile Leu Pro Met Phe Arg Tyr Glu Arg Gln Gln Ala Gly Arg Tyr
 115 120 125
 Arg Gln His His Gln Phe Gly Val Glu Ala Ile Gly Val Arg His Pro
 130 135 140
 Leu Arg Asp Ala Glu Val Leu Ala Leu Leu Trp Asp Phe Tyr Ser Arg
 145 150 155 160
 Val Gly Leu Gln His Met Gln Ile Gln Leu Asn Phe Leu Gly Gly Ser
 165 170 175
 Glu Thr Arg Phe Arg Tyr Asp Lys Val Leu Arg Ala Tyr Leu Lys Glu
 180 185 190
 Ser Met Gly Glu Leu Ser Ala Leu Ser Gln Gln Arg Phe Ser Thr Asn
 195 200 205
 Val Leu Arg Ile Leu Asp Ser Lys Glu Pro Glu Asp Gln Glu Ile Ile
 210 215 220
 Arg Gln Ala Pro Pro Ile Leu Asp Tyr Val Ser Asp Glu Asp Leu Lys
 225 230 235 240
 Tyr Phe Asn Glu Ile Leu Asp Ala Leu Arg Val Leu Glu Ile Pro Tyr

245 250 255
 Ala Ile Asn Pro Arg Leu Val Arg Gly Leu Asp Tyr Tyr Ser Asp Leu
 260 265 270
 Val Phe Glu Ala Thr Thr Thr Phe Gln Glu Val Ser Tyr Ala Leu Gly
 275 280 285
 Gly Gly Gly Arg Tyr Asp Gly Leu Ile Ser Ala Phe Gly Gly Ala Ser
 290 295 300
 Leu Pro Ala Cys Gly Phe Gly Val Gly Leu Glu Arg Ala Ile Gln Thr
 305 310 315 320
 Leu Leu Ala Gln Lys Arg Ile Glu Pro Gln Phe Pro His Lys Leu Arg
 325 330 335
 Leu Ile Pro Met Glu Pro Asp Ala Asp Gln Phe Cys Leu Glu Trp Ser
 340 345 350
 Gln His Leu Arg Arg Leu Gly Ile Pro Thr Glu Val Asp Trp Ser His
 355 360 365
 Lys Lys Val Lys Gly Ala Leu Lys Ala Ala Ser Thr Glu Gln Val Ser
 370 375 380
 Phe Val Cys Leu Ile Gly Glu Arg Glu Leu Ile Ser Gln Gln Leu Val
 385 390 395 400
 Ile Lys Asn Met Ser Leu Arg Lys Glu Phe Phe Gly Thr Lys Glu Glu
 405 410 415
 Val Glu Gln Arg Leu Leu Tyr Glu Ile Gln Asn Thr Pro Leu
 420 425 430
 <210>702
 <211>352
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>702
 Met Asn Val Trp Thr Lys Phe Phe Gln Pro Pro Lys His Ile Lys Glu
 1 5 10 15
 Ile Glu Asp Gln Glu Val Val Lys Lys Tyr Lys Tyr Trp Arg Ile
 20 25 30
 Arg Ile Phe Tyr Ser Met Phe Ile Gly Tyr Ile Phe Tyr Tyr Phe Thr
 35 40 45
 Arg Lys Ser Phe Thr Phe Ala Met Pro Thr Leu Ile Ala Asp Leu Gly
 50 55 60
 Phe Asp Lys Ala Gln Leu Gly Ile Ile Gly Ser Thr Leu Tyr Phe Ser
 65 70 75 80
 Tyr Gly Ile Ser Lys Phe Val Ser Gly Val Met Ser Asp Gln Ser Asn
 85 90 95
 Pro Arg Tyr Phe Met Ala Ile Gly Leu Met Ile Thr Gly Leu Thr Asn
 100 105 110
 Ile Phe Phe Gly Met Ser Ser Ser Ile Val Leu Phe Ala Leu Trp Trp
 115 120 125
 Gly Leu Asn Gly Trp Phe Gln Gly Trp Gly Trp Pro Pro Cys Ala Arg
 130 135 140
 Leu Leu Thr His Trp Tyr Ala Lys Ser Glu Arg Gly Thr Trp Trp Ser
 145 150 155 160
 Val Trp Ser Thr Ser His Asn Ile Gly Gly Ala Leu Ile Pro Ile Leu
 165 170 175
 Thr Gly Phe Ile Ile Asp Tyr Ser Gly Trp Arg Gly Ala Met Tyr Val
 180 185 190
 Pro Gly Ile Leu Cys Ile Gly Met Gly Leu Val Leu Ile Asn Arg Leu
 195 200 205
 Arg Asp Thr Pro Gln Ser Leu Gly Leu Pro Pro Ile Glu Lys Tyr Lys
 210 215 220
 Arg Asp Pro His His Ala His His Glu Gly Lys Ser Ala Ser Glu Gly
 225 230 235 240
 Thr Glu Glu Ile Glu Arg Glu Leu Ser Thr Arg Glu Ile Leu Phe Thr
 245 250 255
 Tyr Val Leu Thr Asn Gln Trp Leu Trp Phe Leu Ala Ala Ala Ser Phe
 260 265 270
 Phe Ile Tyr Ile Val Arg Met Ala Val Asn Asp Trp Ser Ala Leu Phe
 275 280 285

Leu Ile Glu Thr Lys His Tyr Ala Ala Val Lys Ala Asn Phe Cys Val
 290 295 300
 Ser Leu Phe_Glu Ile Gly Gly Leu Phe Gly Met Leu Val Ala Gly Trp
 305 310 315 320
 Leu Ser Asp Lys Ile Ser Lys Gly Asn Arg Gly Pro Met Lys Arg Pro
 325 330 335
 Leu Leu Phe Arg Phe Ala Val Cys Tyr Phe Arg His Val Val Phe Thr
 340 345 350

<210>703

<211>122

<212>PRT

<213>Chlamydia pneumoniae

<400>703

Asn Val Leu Phe Ser Leu Gly Leu Leu Phe Ala Ile Leu Gly Met Trp
 1 5 10 15
 Phe Ser Arg Ser His Asn Gln Trp Trp Val Asp Gly Thr Leu Leu Phe
 20 25 30
 Val Ile Gly Phe Phe Leu Tyr Gly Pro Gln Met Met Ile Gly Leu Ala
 35 40 45
 Ala Ala Glu Leu Ser His Lys Lys Ala Ala Gly Thr Ala Ser Gly Phe
 50 55 60
 Thr Gly Trp Phe Ala Tyr Phe Gly Ala Thr Phe Ala Gly Tyr Pro Leu
 65 70 75 80
 Gly Lys Val Thr Asp Val Trp Gly Trp Lys Gly Phe Phe Ile Ala Leu
 85 90 95
 Leu Ala Cys Ala Ser Ile Ala Leu Leu Leu Phe Leu Pro Thr Trp Asn
 100 105 110
 Ala Thr Glu Lys Asn Thr Arg Ser Lys Ala
 115 120

<210>704

<211>1243

<212>PRT

<213>Chlamydia pneumoniae

<400>704

Gly Phe Phe Leu Thr Trp Ile Pro Leu His Cys His Ser Gln Tyr Ser
 1 5 10 15
 Val Leu Asp Ala Met Ser Ser Ile Lys Asp Phe Val Ala Lys Gly Gln
 20 25 30
 Glu Phe Gly Ile Pro Ala Leu Ala Leu Thr Asp His Gly Asn Leu Tyr
 35 40 45
 Gly Ala Val Asp Phe Tyr Lys Glu Cys Thr Gln Lys Gly Ile Gln Pro
 50 55 60
 Ile Ile Gly Cys Glu Cys Tyr Ile Ala Pro Gly Ser Arg Phe Asp Lys
 65 70 75 80
 Lys Lys Glu Lys Arg Ser Arg Ala Ala His His Leu Ile Leu Leu Cys
 85 90 95
 Lys Asn Glu Gln Gly Tyr Arg Asn Leu Cys Ile Leu Thr Ser Leu Ala
 100 105 110
 Phe Thr Glu Gly Phe Tyr Tyr Phe Pro Arg Ile Asp Lys Asp Leu Leu
 115 120 125
 Arg Gln Tyr Ser Glu Gly Leu Ile Cys Leu Ser Gly Cys Leu Ser Ser
 130 135 140
 Ser Val Ser Asp Ala Ala Leu Lys Ser Pro Glu Ala Leu Leu Leu Glu
 145 150 155 160
 Leu Gln Trp Phe Gln Asp Leu Phe Lys Asp Asp Tyr Phe Thr Glu Val
 165 170 175
 Gln Leu His Lys Met Ser Glu Glu Ser Ile Ala Gly Phe Lys Glu Glu
 180 185 190
 Trp Leu Lys Gln Glu Tyr Tyr Ser Leu Ile Glu Lys Gln Ile Lys Val
 195 200 205
 Asn Thr Ala Val Leu Glu Ala Ser Lys Arg Leu Gly Ile Pro Thr Val
 210 215 220
 Ala Thr Asn Asp Ile His Tyr Ile Asn Ala Asn Asp Trp Gln Ala His
 225 230 235 240

Glu	Ile	Leu	Leu	Asn	Val	Gln	Ser	Gly	Glu	Thr	Val	Arg	Ile	Ala	Lys	245	250	255
Gln	Asn	Thr	His	Ile	Pro	Asn	Pro	Lys	Arg	Lys	Val	Tyr	Arg	Ser	Arg	260	265	270
Glu	Tyr	Tyr	Phe	Lys	Ser	Pro	Ala	Gln	Met	Ala	Glu	Leu	Phe	Lys	Asp	275	280	285
Ile	Pro	Glu	Val	Ile	Ser	Asn	Thr	Leu	Glu	Val	Ala	Lys	Arg	Cys	Asp	290	295	300
Phe	Thr	Phe	Asp	Phe	Ser	Lys	Lys	His	Tyr	Pro	Ile	Tyr	Val	Pro	Glu	305	310	315
Ser	Leu	Lys	Thr	Leu	Asn	Ser	Tyr	Thr	Glu	Glu	Asp	Arg	Tyr	Gln	Ala	325	330	335
Ser	Ala	Val	Phe	Leu	Lys	Gln	Leu	Ala	Glu	Glu	Ala	Leu	Pro	Lys	Lys	340	345	350
Tyr	Ser	Ser	Glu	Val	Leu	Ala	His	Ile	Ala	Lys	Lys	Phe	Pro	His	Arg	355	360	365
Asp	Pro	Ile	Asp	Ile	Val	Lys	Glu	Arg	Met	Asp	Met	Glu	Met	Ala	Ile	370	375	380
Ile	Ile	Pro	Lys	Gly	Met	Cys	Asp	Tyr	Leu	Leu	Ile	Val	Trp	Asp	Ile	385	390	395
Ile	His	Trp	Ala	Lys	Ala	Asn	Gly	Ile	Pro	Val	Gly	Pro	Gly	Arg	Gly	405	410	415
Ser	Gly	Ala	Gly	Ser	Val	Leu	Leu	Phe	Leu	Leu	Gly	Ile	Thr	Glu	Ile	420	425	430
Glu	Pro	Ile	Arg	Phe	Asp	Leu	Phe	Phe	Glu	Arg	Phe	Ile	Asn	Pro	Glu	435	440	445
Arg	Leu	Ser	Tyr	Pro	Asp	Ile	Asp	Ile	Asp	Ile	Cys	Met	Ala	Gly	Arg	450	455	460
Glu	Arg	Val	Ile	Asn	Tyr	Ala	Ile	Glu	Arg	His	Gly	Lys	Asp	Asn	Val	465	470	475
Ala	Gln	Ile	Ile	Thr	Phe	Gly	Thr	Met	Lys	Ala	Lys	Met	Ala	Val	Lys	485	490	495
Asp	Val	Gly	Arg	Thr	Leu	Asp	Met	Ala	Leu	Ser	Lys	Val	Asn	His	Ile	500	505	510
Ala	Lys	His	Ile	Pro	Asp	Leu	Asn	Thr	Thr	Leu	Ser	Lys	Ala	Leu	Glu	515	520	525
Thr	Asp	Pro	Asp	Leu	His	Gln	Leu	Tyr	Ile	Asn	Asp	Ala	Glu	Ser	Ala	530	535	540
Gln	Val	Ile	Asp	Met	Ala	Leu	Cys	Leu	Glu	Gly	Ser	Ile	Arg	Asn	Thr	545	550	555
Gly	Val	His	Ala	Ala	Gly	Val	Ile	Ile	Cys	Gly	Asp	Gln	Leu	Thr	Asn	565	570	575
His	Ile	Pro	Ile	Cys	Ile	Ser	Lys	Asp	Ser	Thr	Met	Ile	Thr	Thr	Gln	580	585	590
Tyr	Ser	Met	Lys	Pro	Val	Glu	Ser	Val	Gly	Met	Leu	Lys	Val	Asp	Leu	595	600	605
Leu	Gly	Leu	Lys	Thr	Leu	Thr	Ser	Ile	Asn	Ile	Ala	Met	Ser	Ala	Ile	610	615	620
Glu	Lys	Lys	Thr	Gly	Gln	Ser	Leu	Ala	Met	Ala	Thr	Leu	Pro	Leu	Asp	625	630	635
Asp	Ala	Thr	Thr	Phe	Ser	Leu	Leu	His	Gln	Gly	Lys	Thr	Met	Gly	Ile	645	650	655
Phe	Gln	Met	Glu	Ser	Lys	Gly	Met	Gln	Glu	Leu	Ala	Lys	Asn	Leu	Arg	660	665	670
Pro	Asp	Leu	Phe	Glu	Glu	Ile	Ile	Ala	Met	Gly	Ala	Leu	Tyr	Arg	Pro	675	680	685
Gly	Pro	Met	Asp	Met	Ile	Pro	Ser	Phe	Ile	Asn	Arg	Lys	His	Gly	Lys	690	695	700
Glu	Ile	Ile	Glu	Tyr	Asp	His	Pro	Leu	Met	Glu	Ser	Ile	Leu	Lys	Glu	705	710	715
Thr	Tyr	Gly	Ile	Met	Val	Tyr	Gln	Glu	Gln	Val	Met	Gln	Ile	Ala	Gly	725	730	735
Ala	Leu	Ala	Ser	Tyr	Ser	Leu	Gly	Glu	Gly	Asp	Val	Leu	Arg	Arg	Ala	740	745	750

Met Gly Lys Lys Asp Phe Gln Gln Met Glu Gln Glu Arg Glu Lys Phe
 755 760 765
 Cys Lys Arg Ala Cys Asn Asn Gly Ile Asp Pro Glu Leu Ala Thr Val
 770 775 780
 Ile Phe Asp Lys Met Glu Lys Phe Ala Ala Tyr Gly Phe Asn Lys Ser
 785 790 795 800
 His Ala Ala Ala Tyr Gly Leu Ile Thr Tyr Thr Thr Ala Tyr Leu Lys
 805 810 815
 Ala Asn Tyr Pro Lys Glu Trp Leu Ala Ala Leu Leu Thr Cys Asp Ser
 820 825 830
 Asp Asp Ile Glu Lys Ile Gly Lys Leu Ile Arg Glu Ala Gln Ser Met
 835 840 845
 Gly Ile Pro Ile Leu Pro Pro His Ile Asn Val Ser Ser Asn His Phe
 850 855 860
 Val Ala Thr Asp Glu Gly Ile Arg Phe Ala Met Gly Ala Ile Lys Gly
 865 870 875 880
 Ile Gly Arg Gly Leu Ile Glu Ser Ile Val Glu Glu Arg Asp His His
 885 890 895
 Gly Pro Tyr Glu Ser Ile Arg Asp Phe Ile Gln Arg Ser Asp Leu Lys
 900 905 910
 Lys Val Ser Lys Lys Ser Ile Glu Ser Leu Ile Asp Ala Gly Cys Phe
 915 920 925
 Asp Cys Phe Asp Ser Asn Arg Asp Leu Leu Leu Ala Ser Val Glu Pro
 930 935 940
 Leu Tyr Glu Ala Ile Ala Lys Asp Lys Lys Glu Ala Ala Ser Gly Val
 945 950 955 960
 Met Thr Phe Phe Thr Leu Gly Ala Met Asp Arg Lys Asn Glu Val Pro
 965 970 975
 Ile Cys Leu Pro Lys Asp Ile Pro Thr Arg Ser Lys Lys Glu Leu Leu
 980 985 990
 Lys Lys Glu Lys Glu Leu Leu Gly Ile Tyr Leu Thr Glu His Pro Met
 995 1000 1005
 Asp Thr Val Arg Asp His Leu Ser Arg Leu Ser Val Val Leu Ala Gly
 1010 1015 1020
 Glu Phe Glu Asn Leu Pro His Gly Ser Val Val Arg Thr Val Phe Ile
 1025 1030 1035 1040
 Ile Asp Lys Val Thr Lys Ile Ser Ser Lys Ala Gln Lys Lys Phe
 1045 1050 1055
 Ala Val Leu Arg Val Ser Asp Gly Ile Asp Ser Tyr Glu Leu Pro Ile
 1060 1065 1070
 Trp Pro Asp Met Tyr Glu Glu Gln Gln Glu Leu Leu Glu Glu Asp Arg
 1075 1080 1085
 Leu Ile Tyr Ala Ile Leu Val Leu Asp Lys Arg Ser Asp Ser Leu Arg
 1090 1095 1100
 Ile Ser Cys Arg Trp Met Lys Asp Leu Ser Ile Val Asn Glu Asn Ile
 1105 1110 1115 1120
 Ile Tyr Glu Cys Asp Gln Ala Phe Asp Arg Ile Lys Asn Gln Val Gln
 1125 1130 1135
 Lys Met Ser Phe Thr Met Ser Thr Ser Gly Lys Glu Thr Lys Ala Lys
 1140 1145 1150
 Gly Asn Lys Pro Asn Glu Asn Gly His Thr Gln Ala Leu Ala Pro Val
 1155 1160 1165
 Thr Leu Ser Leu Asp Leu Asn Glu Leu Arg His Ser His Leu Cys Ile
 1170 1175 1180
 Leu Lys Lys Ile Val Gln Lys His Pro Gly Ser Arg Thr Leu Val Leu
 1185 1190 1195 1200
 Val Phe Thr Gln Asp Asn Glu Arg Val Ala Ser Met Ser Pro Asp Asp
 1205 1210 1215
 Ala Tyr Phe Val Cys Glu Asp Ile Glu Glu Leu Arg Gln Glu Leu Val
 1220 1225 1230
 Thr Ala Asp Leu Pro Val Arg Val Ile Thr Val
 1235 1240
 <210>705
 <211>307

<212>PRT

<213>Chlamydia pneumoniae

<400>705

Asn Ile Ser Leu Leu Cys Lys Ile Gln Lys Arg Tyr Phe Met Lys Lys
 1 5 10 15
 Leu Ile Leu Tyr Phe Ala Ala Phe Val Ala Ser Leu Phe Cys Gly Val
 20 25 30
 Phe Leu Trp Asp Arg Val Pro Cys Ala Gln Lys Ile Met Arg Leu Ala
 35 40 45
 Ala Asp His Ser Ser Glu Val Phe Ser Lys Ser Cys Arg Phe Val Arg
 50 55 60
 Lys Ile Ser Gly Phe Glu Glu Leu Gln Val Phe Glu Arg His Val Ser
 65 70 75 80
 Pro Glu Gln Ala Leu Ala Leu Phe Pro Glu Tyr Arg Asp Gly Lys Ser
 85 90 95
 Phe Val Glu Leu Ala Phe Ile Pro His Thr Leu Met His Val Arg Phe
 100 105 110
 Ser Lys Glu Glu Pro Val Lys Lys His Ile Ile Ser Gln Glu Gly Glu
 115 120 125
 Ile Leu Trp Ser Leu Val Asn Gly Glu Met Val Leu His Thr Gly Thr
 130 135 140
 Trp Thr Cys Ser Lys Gly Phe Arg Glu Cys Leu Leu Leu His Ala Gly
 145 150 155 160
 Lys Gln Asp Met Arg Val Ile Gln Thr Leu Ala Thr Leu Gly Gly Thr
 165 170 175
 Thr Ser Arg Glu Ser Leu Ala Gln Ala Leu Ala Leu Lys Asn Ile Arg
 180 185 190
 Ala Glu Arg Val Ile Lys Glu Cys Gln Lys Lys Lys Leu Ile Phe Ala
 195 200 205
 Ser Gly Asn Gln Ile Gly Thr His Phe Gln Gln Phe Gln Pro Ile Arg
 210 215 220
 Gly Cys Thr Thr Thr Leu Asn Asn Pro Val Trp Leu Gln Lys Pro
 225 230 235 240
 Arg His Ala Ala Val Phe Pro Ala Gln Tyr Ser Glu Asp Arg Val Arg
 245 250 255
 His Leu Val Lys Met Ile Phe Gly Asp Asn Phe Leu Ile Val Arg Ser
 260 265 270
 Ser Met Val Tyr Val Pro Val Tyr Lys Ile Ser Leu Val Ser Ala Asp
 275 280 285
 Asn Ser Val Arg Val Glu Tyr Ile Asn Ala Val Thr Gly Lys Ser Phe
 290 295 300
 Gln Asp Leu
 305

<210>706

<211>171

<212>PRT

<213>Chlamydia pneumoniae

<400>706

Trp Arg Phe Val Val Val Ser Pro Arg Leu Ile Met Lys Phe Leu Leu
 1 5 10 15
 Tyr Val Pro Leu Leu Leu Val Leu Val Ser Thr Gly Cys Asp Ala Lys
 20 25 30
 Pro Val Ser Phe Glu Pro Phe Ser Gly Lys Leu Ser Thr Gln Arg Phe
 35 40 45
 Glu Pro Gln His Ser Ala Glu Tyr Phe Ser Gln Gly Gln Glu Phe
 50 55 60
 Leu Lys Lys Gly Asn Phe Arg Lys Ala Leu Leu Cys Phe Gly Ile Ile
 65 70 75 80
 Thr His His Phe Pro Arg Asp Ile Leu Arg Asn Gln Ala Gln Tyr Leu
 85 90 95
 Ile Gly Val Cys Tyr Phe Thr Gln Asp His Pro Asp Leu Ala Asp Lys
 100 105 110
 Ala Phe Ala Ser Tyr Leu Gln Leu Pro Asp Ala Glu Tyr Ser Glu Glu
 115 120 125

Leu Phe Gln Met Lys Tyr Ala Ile Ala Gln Arg Phe Ala Gln Gly Lys
 130 135 140
 Arg Lys Arg Ile Cys Arg Leu Glu Gly Phe Pro Lys Leu Met Asn Ala
 145 150 155 160
 Asp Glu Asp Ala Tyr Ala Phe Met Thr Arg Phe
 165 170

<210>707

<211>167

<212>PRT

<213>Chlamydia pneumoniae

<400>707

Arg Cys Val Arg Ile Tyr Asp Glu Ile Leu Thr Ala Phe Pro Ser Lys
 1 5 10 15
 Asp Leu Gly Ala Gln Ala Leu Tyr Ser Lys Ala Ala Leu Leu Ile Val
 20 25 30
 Lys Asn Asp Leu Thr Glu Ala Thr Lys Thr Leu Lys Lys Leu Thr Leu
 35 40 45
 Gln Phe Pro Leu His Ile Leu Ser Ser Glu Ala Phe Val Arg Leu Ser
 50 55 60
 Glu Ile Tyr Leu Gln Gln Ala Lys Lys Glu Pro His Asn Leu Gln Tyr
 65 70 75 80
 Leu His Phe Ala Lys Leu Asn Glu Glu Ala Met Lys Lys Gln His Pro
 85 90 95
 Asn His Pro Leu Asn Glu Val Val Ser Ala Asn Val Gly Ala Met Arg
 100 105 110
 Glu His Tyr Ala Arg Gly Leu Tyr Ala Thr Gly Arg Phe Tyr Glu Lys
 115 120 125
 Lys Lys Lys Ala Glu Ala Ala Asn Ile Tyr Tyr Arg Thr Ala Ile Thr
 130 135 140
 Asn Tyr Pro Asp Thr Leu Leu Val Ala Lys Cys Gln Lys Arg Leu Asp
 145 150 155 160
 Arg Ile Ser Lys His Thr Ser
 165

<210>708

<211>212

<212>PRT

<213>Chlamydia pneumoniae

<400>708

Ile Glu Tyr Leu Ser Ile Leu Pro Lys Ile Glu Ile Asn Met Arg Leu
 1 5 10 15
 Phe Ser Leu Gly Thr Ile Tyr Leu Phe Phe Ser Leu Ala Leu Ser Ser
 20 25 30
 Cys Cys Gly Tyr Ser Ile Leu Asn Ser Pro Tyr His Leu Ser Ser Leu
 35 40 45
 Gly Lys Ser Leu Leu Gln Glu Arg Ile Phe Ile Ala Pro Ile Lys Glu
 50 55 60
 Asp Pro His Gly Gln Leu Cys Ser Ala Leu Thr Tyr Glu Leu Ser Lys
 65 70 75 80
 Arg Ser Phe Ala Ile Ser Gly Arg Ser Ser Cys Ala Gly Tyr Thr Leu
 85 90 95
 Lys Val Glu Leu Leu Asn Gly Ile Asp Lys Asn Ile Gly Phe Thr Tyr
 100 105 110
 Ala Pro Asn Lys Leu Gly Asp Lys Thr His Arg His Phe Ile Val Ser
 115 120 125
 Asn Glu Gly Arg Leu Ser Leu Ser Ala Lys Val Gln Leu Ile Asn Asn
 130 135 140
 Asp Thr Gln Glu Val Leu Ile Asp Gln Cys Val Ala Arg Glu Ser Val
 145 150 155 160
 Asp Phe Asp Phe Glu Pro Asp Leu Gly Thr Ala Asn Ala His Glu Phe
 165 170 175
 Ala Leu Gly Gln Phe Glu Met His Ser Glu Ala Ile Lys Ser Ala Arg
 180 185 190
 Arg Ile Leu Ser Ile Arg Leu Ala Glu Thr Ile Ala Gln Gln Val Tyr
 195 200 205

Tyr Asp Leu Phe

210

<210>709

<211>150

<212>PRT

<213>Chlamydia pneumoniae

<400>709

Leu Leu Asn Arg Tyr Thr Met Thr Phe Phe Glu Gly Glu Thr Val Phe
 1 5 10 15
 Pro Ala Val Leu Ser Glu Leu His Ser Met Leu Asp Leu Ile Lys Arg
 20 25 30
 Ala Gly Lys Gln Ser Lys Cys Pro Gln Glu Lys Leu Leu Lys Leu Glu
 35 40 45
 Leu Ala Cys Glu Glu Leu Leu Val Asn Ile Ile Ser Tyr Ala Tyr Gln
 50 55 60
 Gly Glu Asn Ser Pro Gly Thr Ile Ala Ile Ser Cys Ile Ser His Arg
 65 70 75 80
 Gly Asp Leu Glu Val Val Ile Lys Asp His Gly Pro Ser Phe Asn Pro
 85 90 95
 Leu Ala Val Ser Ile Asn Ile Gln Glu Asp Leu Pro Leu Glu Gln Arg
 100 105 110
 Lys Leu Gly Gly Leu Gly Ile Phe Leu Ala Lys Ser Ser Val Asp Glu
 115 120 125
 Phe Leu Tyr Ala Arg Glu Asp His Cys Asn Ile Val His Leu Lys Met
 130 135 140
 Leu Asn Gly Gln His Ser
 145 150

<210>710

<211>152

<212>PRT

<213>Chlamydia pneumoniae

<400>710

Arg Ile Thr Ile Asn Gln Arg Lys Tyr Thr Met Ser Leu Asp Phe Phe
 1 5 10 15
 Glu Glu Phe Tyr His Gln Ser Ile Leu Asn Thr Gly Thr Ser Phe Pro
 20 25 30
 Glu Gly Tyr Leu Asn Ile Ala Glu Ile Leu Ser Tyr Pro His Cys Thr
 35 40 45
 Asp Ala Asn Thr Asp Phe Leu Cys Ser Gln Ser Asp Asn Asp Phe Ile
 50 55 60
 Ile Ala Glu Ser Lys Asp Lys Leu Thr Leu Phe Asn Ala Asp Phe Ala
 65 70 75 80
 Ile Trp Leu Val Pro Glu Leu Val Gln Gly Gln Ala Val Thr Arg Gly
 85 90 95
 Tyr Ile Ala Val Ser Gln Gly Glu Gly Asn Tyr Glu Pro Glu Met Ala
 100 105 110
 Phe Glu Ala Ser Gly Gln Tyr Asn Gln Ser Ser Leu Ile Leu Glu Ala
 115 120 125
 Leu Gln Leu Tyr Leu Lys Asp Ile Lys Asp Thr Glu Asn Ala Leu Arg
 130 135 140
 Ser Phe Arg Phe Asn Asn Asp His
 145 150

<210>711

<211>436

<212>PRT

<213>Chlamydia pneumoniae

<400>711

Met Lys Arg Pro Phe Phe Thr Tyr Leu Cys Ile Ile Phe Tyr Gly Ser
 1 5 10 15
 Cys Ala Ser Leu Ser Leu His Ala Gly Leu Ser Phe Pro Glu Val Arg
 20 25 30
 Gly Ala Thr Ala Ala Val Val His Ala Asp Ser Gly Lys Val Phe Tyr
 35 40 45
 Asp Lys Asp Ile Asp Ala Val Ile Tyr Pro Ala Ser Met Thr Lys Ile

50	55	60
Ala Thr Ala Leu Phe Ile	Leu Lys His Tyr Pro Thr Val Leu Asp Thr	
65	70	75
Leu Ile Lys Val Lys Gln Asp Ala Ile	Ala Ser Ile Thr Pro Gln Ala	80
	85	90
Lys Lys Gln Ser Gly Tyr Arg Ser Pro	Pro His Trp Leu Glu Thr Asp	95
	100	105
Gly Ser Thr Ile Gln Leu His Leu Arg	Glu Glu Leu Leu Gly Trp Asp	110
	115	120
Leu Phe His Ala Leu Leu Val Cys Ser	Ala Asn Asp Ala Ala Asn Val	125
	130	135
Leu Ala Met Ala Cys Cys Gly Ser Val	Glu Lys Phe Met Asp Lys Leu	140
	145	150
Asn Phe Phe Leu Lys Glu Glu Ile Gly	Cys Thr His Thr His Phe Asn	155
	165	170
Asn Pro His Gly Leu His His Pro Asn	His Tyr Thr Thr Thr Arg Asp	175
	180	185
Leu Ile Ser Ile Met Arg Cys Ala Leu	Lys Glu Pro Pro Phe Arg Gly	190
	195	200
Val Ile Ser Thr Thr Ser Tyr Lys Ile	Gly Ala Thr Asn Leu His Gly	205
	210	215
Glu Arg Ile Leu Ser Pro Thr Asn Lys	Leu Leu Pro Gly Ser Thr	220
	225	230
Tyr His Tyr Pro Pro Ala Leu Glu Gly	Lys Thr Gly Thr Thr Lys Thr	235
	245	250
Ala Gly Lys Asn Leu Ile Met Ala Ala	Glu Lys Asn Asn Arg Leu Leu	255
	260	265
Val Thr Ile Ala Thr Gly Tyr Ser Gly	Pro Val Ser Asp Leu Tyr Gln	270
	275	280
Asp Val Ile Ala Leu Cys Glu Thr Val	Phe Asn Glu Pro Leu Leu Arg	285
	290	295
Lys Glu Leu Val Pro Pro Ser Asp Cys	Leu Gln Leu Glu Ile Ala Asn	300
	305	310
Leu Gly Lys Leu Ser Cys Pro Leu Pro	Glu Gly Leu Tyr Tyr Asp Phe	315
	325	330
Tyr Ala Ser Glu Asp Arg Glu Pro Leu	Ser Val Ser Phe Ile Ala His	335
	340	345
Ala Asp Ala Phe Pro Ile Glu Gln Gly	Asp Leu Leu Gly His Trp Val	350
	355	360
Phe Tyr Asp Asp Glu Gly Lys Lys Ile	Ser Ser Gln Pro Phe Tyr Ala	365
	370	375
Pro Cys Arg Phe Glu Arg Thr Ile Lys	Pro Trp Lys Leu Tyr Met Lys	380
	385	390
Arg Val Phe Thr Ser Tyr Arg Thr Tyr	Met Ser Ile Thr Met Leu Leu	395
	405	410
Met Tyr Phe Arg Ile Arg Lys His Arg	Lys Tyr Lys Asn Leu Lys His	415
	420	425
Tyr Ser Lys Ile		430
	435	

<210>712

<211>371

<212>PRT

<213>Chlamydia pneumoniae

<400>712

Arg Gly Ile Leu Tyr Val Thr Met Val	Pro Phe Arg Gln His His Ala
1	5 10 15
Tyr Gln Leu Leu Lys Gln Leu His Thr	Ser Ala Ile Ser Glu Ala Asp
20	25 30
Arg Val Ser Tyr Tyr Phe Lys Gln Asn	Arg Ser Leu Gly Ser Lys Asp
35	40 45
Arg Gln Trp Ile Gln Asn Ile Ile Phe	Asn Ile Leu Arg His Arg Arg
50	55 60
Leu Leu Glu Thr Leu Ile Leu Asp Ser	Gly Glu Gln Val Thr Pro Glu
65	70 75 80

PCT/DV98/01890

<210>713

<211>388

<212>PRT

<213>Chlamydia pneumoniae

<400>713

Val	Pro	Leu	Ser	Met	Ile	Leu	Asp	Phe	Gln	Phe	Ser	Ile	Gly	Tyr	Tyr
1				5					10					15	
Leu	Arg	Val	Leu	Glu	Leu	Ala	Ile	Arg	Asp	Gly	Thr	Arg	Ile	Leu	Ala
			20					25					30		
Tyr	Asp	Arg	Lys	Arg	Leu	Leu	Asp	Ala	Trp	Pro	Val	Asn	Asp	Pro	
		35					40				45				
Leu	Pro	Thr	Asn	Tyr	Asp	Thr	Ser	Val	Ser	Thr	Ile	Arg	Gln	Val	Ile
	50					55					60				
His	Glu	Leu	Phe	Ser	Trp	Ser	Ala	Ile	Ser	Tyr	Ser	Ile	Ser	Ser	Arg
65					70					75					80
Leu	Leu	Ala	Ile	Ile	Glu	Leu	Arg	Leu	His	Glu	Glu	Lys	Pro	Gln	Thr
			85						90					95	
Gly	Trp	Leu	Tyr	Arg	Leu	Phe	Phe	Pro	Ser	Lys	Tyr	His	Ile	Lys	Lys
		100						105					110		
Ala	Ile	Val	Asp	Lys	Leu	Cys	Met	Phe	Lys	Ser	Leu	Ile	Leu	Phe	Glu
		115					120				125				
Ser	Lys	Arg	Pro	Val	Asp	Lys	Ile	Val	Gln	Ala	Ala	Asn	Lys	Val	Phe
	130				135						140				
Ser	Lys	Gly	Lys	Ser	Asn	Phe	Ser	Ser	Trp	Glu	Asp	Phe	Thr	His	Glu
145					150					155					160
Val	Thr	Val	Ser	Glu	Val	Gln	Thr	Pro	Leu	Ala	Gly	Glu	Val	Gln	Arg

165 170 175
 Arg Leu Ala Ala Asp Ala Ser Leu Gln Met Ile Ile Glu Ala Leu Thr
 180 185 190
 Thr Leu Leu Glu Gly His Thr Ala Tyr Leu Pro Leu Ser Leu Glu Leu
 195 200 205
 Leu Asn Gln Phe Ile Gly Glu Lys Ala Gln Pro Leu Lys Thr Leu Ser
 210 215 220
 Glu Lys Ser Tyr Val Leu Arg Glu Leu Ile Gln Leu Phe Ser Leu
 225 230 235 240
 Ser Ala Glu Asp Phe Gln Thr Ile Ile Met Ser Ile Ile Ser Asp Ser
 245 250 255
 Leu Ser Glu Val Leu Ala Asn Ser Leu Ile Gly Asn Gln Pro Leu Thr
 260 265 270
 Phe His Gly Lys Thr Phe Val Gly Leu Trp Gln Glu Thr Ala Leu Ala
 275 280 285
 Ser Pro Glu Asp Ser Lys Leu Ala Leu Gly Phe Leu Ala Glu Val Leu
 290 295 300
 Arg Lys Val Ile Val Glu Lys Lys Leu His Val Ser Lys Ser Asp Asn
 305 310 315 320
 Thr Thr Pro Glu Glu Val Gly Asn Ile Tyr Ser Ile Arg Asp Gln Asn
 325 330 335
 Pro Ala Leu Trp Asp Lys Met Ile Thr Met Leu Leu Met Arg Trp Leu
 340 345 350
 Leu Asp Tyr Asp Arg Asp Ile Gly Ile Ala Leu Arg Lys Ala Ala Glu
 355 360 365
 Tyr Tyr Asn Pro His Pro Ser Phe Trp Arg Gln Phe Leu Arg Leu Trp
 370 375 380
 Gln Arg Arg Pro

385

<210>714

<211>82

<212>PRT

<213>Chlamydia pneumoniae

<400>714

Phe Thr Ser Pro Tyr Leu Gly Ala Gly Gln Cys Val Ser Val Val Asp
 1 5 10 15
 Asn Leu Lys Thr Tyr Asp Leu Gly Arg Asn Tyr Thr Gln Val Leu Ala
 20 25 30
 Cys Ala Ser Gln Ile Asp Glu Phe Ala Asp Lys Gly Glu Asn Glu Ala
 35 40 45
 Leu Val Met Lys Asp Ile Leu Tyr Leu Val Arg Gln Asp Arg Ser Lys
 50 55 60
 Glu Leu Gly Asp Phe Leu Met Met Trp Ser Glu Glu His Ala Ser Glu
 65 70 75 80
 Val Asn

<210>715

<211>264

<212>PRT

<213>Chlamydia pneumoniae

<400>715

Ser Met Gly Thr Pro Ile Ser Gly Asn Asp Gly Asp Arg Asn Thr Ile
 1 5 10 15
 Ser Asp Pro Leu Glu Glu Ser Ala Ala Glu Glu Gly Asp Ser Asp Leu
 20 25 30
 Glu Asp Arg Val Ser Glu Ser Ala Thr Gln Val Ile Glu Thr Ile Ala
 35 40 45
 Asp Thr Gly Ile Pro Glu Ala Thr Pro Ser Glu Gly Thr Asn Ser Asp
 50 55 60
 Leu Asn Ser Asp Leu Val Asp Arg Val Glu Tyr Glu Ala Arg Gly Ser
 65 70 75 80
 Leu Leu Thr Thr Met Leu Ala Arg Ile Arg Lys Ala Val Ser Gln Ile
 85 90 95
 Trp Met His Val Lys Thr Lys Arg His Pro Lys Glu Gln Gly Val Arg

100 105 110
 Ser Leu Gly Asp Ile Pro Cys Asp Leu Leu Lys Ala Thr Arg Leu Pro
 115 120 125
 Lys Glu Thr Ala Glu Pro Pro Tyr Phe Tyr Ala Leu Glu Thr Ala Leu
 130 135 140
 Ala Ser Cys Arg Ser Phe Phe His Val Phe Leu Arg Leu Phe Thr
 145 150 155 160
 Leu Leu Arg Arg Gln His Pro Glu Ala Pro Leu Asp Leu Cys Gly Thr
 165 170 175
 Asp Pro Ile Ser Pro Glu Ala Ala Val Ala Phe Ala Leu Ile Leu Arg
 180 185 190
 Ser Cys Cys Lys Trp Val Ala Thr Asp Ala Val Gln Glu Gly Leu Pro
 195 200 205
 Leu Glu Val Ile Glu Glu Ala Gly Met Tyr Asn Ala Phe Ser Leu Glu
 210 215 220
 Ala Thr Thr Thr Val Glu Glu Val Ser Lys Arg Leu Ser Glu Leu Leu
 225 230 235 240
 Tyr Ser Asp Lys Arg Ile Asp Gly Leu Ala Asn Val Arg Gly Ile Thr
 245 250 255
 Lys Ile Asn Leu Pro Leu Leu Ile
 260

<210>716

<211>385

<212>PRT

<213>Chlamydia pneumoniae

<400>716

Arg Ile Ala Met Gly Ile Asn Pro Ser Gly Asn Arg Ser Pro Asp Asp
 1 5 10 15
 Val Trp Val Arg Gly Ala Gln Gly Asp Ser Ser Ser Thr Gln Gly Thr
 20 25 30
 Gly Ala Thr Asn Ser Asn Leu Gly Ala His Asn Val Thr Ser Thr
 35 40 45
 Ser Gln Pro Gln Val Ala Ser Lys Ala Lys Gln Leu Trp Gln Thr Val
 50 55 60
 Arg Glu Phe Phe Leu Gly Lys Lys Ser Pro Asp Ser Ser Gln Gly Ala
 65 70 75 80
 Ser Gly Pro Ala Met Gln Ser Pro Ser Gly Pro Thr Ile Arg Pro Thr
 85 90 95
 Arg Pro Ala Pro Pro Pro Pro Thr Thr Gly Gly Ala Asn Ala Lys Arg
 100 105 110
 Pro Ala Thr His Gly Lys Gly Arg Ala Pro Gln Pro Pro Thr Ala Gly
 115 120 125
 Ser Ser Ser Gly Ser Glu Gln Pro Thr Ala Met Ser Ser Glu Val Ala
 130 135 140
 Lys Leu Val Ser Glu Leu Lys Asp Ala Val His Ser His Ala Glu Ser
 145 150 155 160
 Gln Lys Val Leu Lys Lys Val Ser Gln Glu Leu Gln Thr Lys Trp Thr
 165 170 175
 Asp Trp Glu Asn Asn Arg Gly Pro Asp Tyr Leu Leu His Gly Tyr Arg
 180 185 190
 Val Ile Ala Arg Ala Leu Gln Gln Thr Tyr Thr Glu Gln Ser Met Leu
 195 200 205
 Ile Glu Gly Thr Ser Ser Thr Gly Pro Val Pro Gln Ala Val Thr Val
 210 215 220
 Ala Lys Asp Ala Val Thr Gln Thr Val Arg Gly Ala Ile Lys Asn Leu
 225 230 235 240
 Glu Asn Pro Lys Pro Gly Asn Asp Pro Asp Gly Val Leu Met Gln Val
 245 250 255
 Val Ile Ser Leu Gly Ile Glu Gly Pro Thr Leu Asp Pro Gly Glu Ser
 260 265 270
 Ile Gln Asn Phe Leu Glu Thr Arg Val Ser Asp Phe Gly Gly Asp Asp
 275 280 285
 Ser Asp Ile Asp Tyr Thr Ser Asp Ile Ala Arg Leu Gly Ser Ala Leu
 290 295 300

Asp Arg Val Arg Glu Asn His Pro Asn Glu Met Pro Arg Ile Trp Ile
 305 310 315 320
 Ala Leu Ala Arg Glu Leu Gly Ala Ala Val His Ser His Ala Thr Ser
 325 330 335
 Val Arg Ile Ala Asn Ala Gly Lys Asn His Thr Arg Asp Val Val Arg
 340 345 350
 Met Ala Asn Glu Ser Ser Arg Leu Leu Gln Gly Met Lys Val Leu Ser
 355 360 365
 Val Gly Ala Trp Ala Asn Thr Met Thr Val Leu Ile Gly Asp Leu Phe
 370 375 380

Glu

385

<210>717

<211>216

<212>PRT

<213>Chlamydia pneumoniae

<400>717

Lys Ile Ile Met Ser Val Asn Pro Ser Gly Asn Ser Lys Asn Asp Leu
 1 5 10 15
 Trp Ile Thr Gly Ala His Asp Gln His Pro Asp Val Lys Glu Ser Gly
 20 25 30
 Val Thr Ser Ala Asn Leu Gly Ser His Arg Val Thr Ala Ser Gly Gly
 35 40 45
 Arg Gln Gly Leu Leu Ala Arg Ile Lys Glu Ala Val Thr Gly Phe Phe
 50 55 60
 Ser Arg Met Ser Phe Phe Arg Ser Gly Ala Pro Arg Gly Ser Gln Gln
 65 70 75 80
 Pro Ser Ala Pro Ser Ala Asp Thr Val Arg Ser Pro Leu Pro Gly Gly
 85 90 95
 Asp Ala Arg Ala Thr Glu Gly Ala Gly Arg Asn Leu Ile Lys Lys Gly
 100 105 110
 Tyr Gln Pro Gly Met Lys Val Thr Ile Pro Gln Val Pro Gly Gly Gly
 115 120 125
 Ala Gln Arg Ser Ser Gly Ser Thr Thr Leu Lys Pro Thr Arg Pro Ala
 130 135 140
 Pro Pro Pro Pro Lys Thr Gly Gly Thr Asn Ala Lys Arg Pro Ala Thr
 145 150 155 160
 His Gly Lys Gly Pro Ala Pro Gln Pro Pro Lys Thr Gly Gly Thr Asn
 165 170 175
 Ala Lys Arg Ala Ala Thr His Gly Lys Gly Pro Ala Pro Gln Pro Pro
 180 185 190
 Lys Gly Ile Leu Lys Gln Pro Gly Gln Ser Gly Thr Ser Gly Lys Lys
 195 200 205
 Arg Val Ser Trp Ser Asp Glu Asp
 210 215

<210>718

<211>404

<212>PRT

<213>Chlamydia pneumoniae

<400>718

Gly Tyr Met Asp Lys Leu Thr Val Gln Asp Leu Ser Pro Glu Glu Lys
 1 5 10 15
 Lys Val Leu Val Arg Val Asp Phe Asn Val Pro Met Gln Asp Gly Lys
 20 25 30
 Ile Leu Asp Asp Ile Arg Ile Arg Ser Ala Met Pro Thr Ile Asn Tyr
 35 40 45
 Leu Leu Lys Lys His Ala Ala Val Ile Leu Met Ser His Leu Gly Arg
 50 55 60
 Pro Lys Gly Gln Gly Phe Gln Glu Glu Tyr Ser Leu Gln Pro Val Val
 65 70 75 80
 Asp Val Leu Glu Gly Tyr Leu Gly His His Val Pro Leu Ala Pro Asp
 85 90 95
 Cys Val Gly Glu Val Ala Arg Gln Ala Val Ala Gln Leu Ser Pro Gly
 100 105 110

```

Arg Val Leu Leu Leu Glu Asn Leu Arg Phe His Ile Gly Glu Glu His
      115              120              125
Pro Glu Lys Asp Pro Thr Phe Ala Ala Glu Leu Ser Ser Tyr Gly Asp
      130              135              140
Phe Tyr Val Asn Asp Ala Phe Gly Thr Ser His Arg Lys His Ala Ser
      145              150              155              160
Val Tyr Val Val Pro Gln Ala Phe Pro Gly Arg Ala Ala Ala Gly Leu
      165              170              175
Leu Met Glu Lys Glu Leu Glu Phe Leu Gly Arg His Leu Leu Thr Ser
      180              185              190
Pro Lys Arg Pro Phe Thr Ala Ile Leu Gly Gly Ala Lys Ile Ser Ser
      195              200              205
Lys Ile Gly Val Ile Glu Ala Leu Leu Asn Gln Val Asp Tyr Leu Leu
      210              215              220
Leu Ala Gly Gly Met Gly Phe Thr Phe Leu Gln Ala Leu Gly Lys Ser
      225              230              235              240
Leu Gly Asn Ser Leu Val Glu Lys Ser Ala Leu Asp Leu Ala Arg Asn
      245              250              255
Val Leu Lys Ile Ala Lys Ser Arg Asn Val Thr Ile Val Leu Pro Ser
      260              265              270
Asp Val Lys Ala Ala Glu Asn Leu Gln Ser Lys Glu Tyr Ser Val Ile
      275              280              285
Ser Ile Asp Gln Gly Ile Pro Pro His Leu Gln Gly Phe Asp Ile Gly
      290              295              300
Pro Arg Thr Thr Glu Glu Phe Ile Arg Ile Ile Asn Gln Ser Ala Thr
      305              310              315              320
Val Phe Trp Asn Gly Pro Val Gly Val Tyr Glu Val Pro Pro Phe Asp
      325              330              335
Ser Gly Ser Ile Ala Ile Ala Asn Ala Leu Gly Asn His Pro Ser Ala
      340              345              350
Val Thr Val Val Gly Gly Gly Asp Ala Ala Ala Val Val Ala Leu Ala
      355              360              365
Gly Cys Ser Thr Lys Val Ser His Val Ser Thr Gly Gly Gly Ala Ser
      370              375              380
Leu Glu Phe Leu Glu Gln Gly Phe Leu Pro Gly Thr Glu Val Leu Ser
      385              390              395              400
Pro Ser Lys Ser

```

<210>719

<211>121

<212>PRT

<213>Chlamydia pneumoniae

<400>719

```

Trp Asn Lys Ala Leu Lys Ala Lys Lys Lys Ser Met Asp Asn Lys Ala
      1              5              10              15
Pro Ala Gly Ser Val Ile Asn Gln Glu Ser Thr Ile Ser Leu Ile Met
      20              25              30
Phe Lys Leu Met Ala Arg Ile Pro Arg Ala Lys Pro Ile Pro Lys Thr
      35              40              45
Ala Pro Thr Thr Thr Cys Val Val Asp Ile Gly Ser Pro Lys Ile Glu
      50              55              60
Ala Lys Ala Ile Val Asn Ala Glu Pro Ile Pro Thr Glu Asn Pro Arg
      65              70              75              80
Asp Gly Val Asn Ser Val Ile Leu Gln Pro Thr Val Ser Ile Thr Arg
      85              90              95
His Pro Gln Ile Ala Arg Pro Met Thr Lys Pro Met Pro Pro Asn Ala
      100              105              110
Met Ser Leu Ile Asn Val Tyr Asp Val
      115              120

```

<210>720

<211>428

<212>PRT

<213>Chlamydia pneumoniae

<400>720

Tyr Ser Met Leu Pro Leu Ile Ile Phe Val Leu Leu Cys Gly Phe Tyr
 1 5 10 15
 Thr Ser Trp Asn Ile Gly Ala Asn Asp Val Ala Asn Ala Val Gly Pro
 20 25 30
 Ser Val Gly Ser Gly Val Leu Thr Leu Arg Gln Ala Val Val Ile Ala
 35 40 45
 Ala Ile Phe Glu Phe Phe Gly Ala Leu Leu Leu Gly Asp Arg Val Ala
 50 55 60
 Gly Thr Ile Glu Ser Ser Ile Val Ser Val Thr Asn Pro Met Ile Ala
 65 70 75 80
 Ser Gly Asp Tyr Met Tyr Gly Met Thr Ala Ala Leu Leu Ala Thr Gly
 85 90 95
 Val Trp Leu Gln Leu Ala Ser Phe Phe Gly Trp Pro Val Ser Thr Thr
 100 105 110
 His Ser Ile Val Gly Ala Val Ile Gly Phe Gly Leu Val Leu Gly Lys
 115 120 125
 Gly Thr Ile Ile Tyr Trp Asn Ser Val Gly Ile Ile Leu Ile Ser Trp
 130 135 140
 Ile Leu Ser Pro Phe Met Gly Gly Cys Val Ala Tyr Leu Ile Phe Ser
 145 150 155 160
 Phe Ile Arg Arg His Ile Phe Tyr Lys Asn Asp Pro Val Leu Ala Met
 165 170 175
 Val Arg Val Ala Pro Phe Leu Ala Ala Leu Val Ile Met Thr Leu Gly
 180 185 190
 Thr Val Met Ile Ser Gly Gly Val Ile Leu Lys Val Ser Ser Thr Pro
 195 200 205
 Trp Ala Val Ser Gly Val Leu Val Cys Gly Leu Leu Ser Tyr Ile Ile
 210 215 220
 Thr Phe Tyr Tyr Val His Thr Lys His Cys Ser Tyr Ile Ser Asp Thr
 225 230 235 240
 Pro Lys Lys Gly Ser Leu Thr Tyr Arg Leu Lys Glu Arg Gly Gly Asn
 245 250 255
 Tyr Gly Arg Lys Tyr Leu Val Val Glu Arg Ile Phe Ala Tyr Leu Gln
 260 265 270
 Ile Ile Val Ala Cys Phe Met Ala Phe Ala His Gly Ser Asn Asp Val
 275 280 285
 Ala Asn Ala Ile Ala Pro Val Ala Gly Val Leu Arg Gln Ala Tyr Pro
 290 295 300
 Ala Ser Tyr Thr Ser Tyr Thr Leu Ile Arg Leu Met Ala Phe Gly Gly
 305 310 315 320
 Ile Gly Leu Val Ile Gly Leu Ala Ile Trp Gly Trp Arg Val Ile Glu
 325 330 335
 Thr Val Gly Cys Lys Ile Thr Glu Leu Thr Pro Ser Arg Gly Phe Ser
 340 345 350
 Val Gly Met Gly Ser Ala Leu Thr Ile Ala Leu Ala Ser Ile Leu Gly
 355 360 365
 Leu Pro Ile Ser Thr Thr His Val Val Val Gly Ala Val Leu Gly Ile
 370 375 380
 Gly Leu Ala Arg Gly Ile Arg Ala Ile Asn Leu Asn Ile Ile Lys Asp
 385 390 395 400
 Ile Val Leu Ser Trp Phe Ile Thr Leu Pro Ala Gly Ala Leu Leu Ser
 405 410 415
 Ile Leu Phe Phe Phe Ala Leu Arg Ala Leu Phe His
 420 425

<210>721

<211>248

<212>PRT

<213>Chlamydia pneumoniae

<400>721

Asn Gly Ile Arg Ser His Lys Ser Phe Thr Arg Ser Phe Arg Gln Val
 1 5 10 15
 Ile Ile Ala Lys Lys Ala Ile Leu Met Gln Thr Leu Ala Arg Leu Phe
 20 25 30
 Gly Gln Ser Pro Phe Ala Pro Leu Gln Ala His Leu Glu Met Val Val

35 40 45
 Ser Cys Val Glu Tyr Met Leu Pro Ile Phe Thr Ala Leu Arg Asp Gly
 50 55 60
 Arg Tyr Glu Glu Leu Leu Glu Met Ala Lys Leu Val Ser Asp Lys Glu
 65 70 75 80
 Tyr Gln Ala Asp Cys Ile Lys Asn Asp Met Arg Asn His Leu Pro Ala
 85 90 95
 Gly Leu Phe Met Pro Ile Ser Arg Ala Gly Ile Leu Glu Ile Ile Ser
 100 105 110
 Ile Gln Asp Ser Ile Ala Asp Thr Ala Glu Asp Val Ala Ile Leu Leu
 115 120 125
 Thr Ile Arg Arg Leu Asn Phe Tyr Pro Ser Met Glu Thr Leu Phe Phe
 130 135 140
 Arg Phe Leu Glu Lys Asn Leu Glu Ala Phe Glu Leu Thr Met Thr Leu
 145 150 155 160
 Leu His Glu Phe Asn Gln Leu Leu Glu Ser Ser Phe Gly Gly Arg Lys
 165 170 175
 Ala Asp Lys Ala Arg Leu Leu Val Gly Arg Val Ala Lys Ser Glu His
 180 185 190
 Glu Ser Asp Val Leu Gln Arg Glu Leu Met Gln Ile Phe Phe Ser Asp
 195 200 205
 Asp Phe Ile Ile Pro Glu Lys Glu Phe Tyr Leu Trp Leu Gln Val Ile
 210 215 220
 Arg Arg Thr Ala Gly Ile Ser Asp Ser Ser Glu Lys Leu Ala His Arg
 225 230 235 240
 Ile Asn Met Thr Leu Glu Glu Lys
 245

<210>722

<211>161

<212>PRT

<213>Chlamydia pneumoniae

<400>722

Lys Ile Ile Glu Ile Ser Val Pro Ile Ile Phe Phe Cys Ile Glu Arg
 1 5 10 15
 Glu Ala Val Ser Lys Leu Trp Pro Trp Lys Leu Thr Trp Pro Glu Thr
 20 25 30
 Glu Asn Gly Gly Gln Gly Ser Asn Arg Arg Ile Ala Cys Ala Glu Thr
 35 40 45
 Asp Phe Pro Asp Pro Asp Ser Pro Met Ile Ala Lys Val Cys Pro Ser
 50 55 60
 Leu Ile Val Asn Asp Lys Asp Trp Thr Met Gly Tyr Cys Trp Arg Cys
 65 70 75 80
 Phe Ala Lys Val Met Asp Arg Ser Ser Ile Cys Lys Met Gly Leu Glu
 85 90 95
 Ala Ile Ser Arg Leu Gln Asp Arg Leu Gly Lys Leu Leu Leu Arg Lys
 100 105 110
 Arg Leu Phe Leu Cys Lys Pro Leu Leu Val Tyr Leu Ala Asn Leu His
 115 120 125
 Leu Leu Leu Tyr Lys Leu Ile Trp Lys Trp Trp Ser Leu Val Trp Asn
 130 135 140
 Thr Cys Phe Leu Tyr Ser Leu Leu Ser Glu Met Glu Asp Met Lys Asn
 145 150 155 160
 Tyr

<210>723

<211>344

<212>PRT

<213>Chlamydia pneumoniae

<400>723

Leu His Lys Asn Ser Leu Phe Arg Asn Asn Asn Leu Pro Lys Arg Ser
 1 5 10 15
 Cys Lys Arg Leu Met Ala Ser Asn Pro Ile Leu Gln Ile Glu Asp Leu
 20 25 30
 Ser Ile Thr Leu Ala Lys Gln Arg Gln Gln Tyr Pro Ile Val Gln Ser

35 40 45
 Leu Ser Phe Thr Ile Asn Glu Gly Gln Thr Leu Ala Ile Ile Gly Glu
 50 55 60
 Ser Gly Ser Gly Lys Ser Val Ser Ala His Ala Ile Leu Arg Leu Leu
 65 70 75 80
 Pro Cys Pro Pro Phe Ser Val Ser Gly Gln Val Asn Phe Gln Gly His
 85 90 95
 Asn Leu Leu Thr Ala Ser Arg Ser Ile Gln Lys Lys Ile Ile Gly Thr
 100 105 110
 Glu Ile Ser Met Ile Phe Gln Asn Pro Gln Ala Ser Leu Asn Pro Val
 115 120 125
 Phe Thr Ile Glu Gln Gln Phe Arg Glu Ile Ile His Thr His Leu Ala
 130 135 140
 Leu Thr Ala Glu Val Ala Lys Glu Lys Met Leu Tyr Ala Leu Glu Glu
 145 150 155 160
 Thr Gly Phe His Asp Pro Arg Leu Cys Leu Asn Leu Tyr Pro His Gln
 165 170 175
 Leu Ser Gly Gly Met Leu Gln Arg Ile Cys Ile Ala Met Ala Leu Leu
 180 185 190
 Cys Ser Pro Lys Leu Leu Ile Ala Asp Glu Pro Thr Thr Ala Leu Asp
 195 200 205
 Val Ser Val Gln Tyr Gln Ile Leu Gln Leu Leu Lys Thr Leu Gln Lys
 210 215 220
 Lys Thr Gly Met Ser Leu Leu Ile Ile Thr His Asn Met Gly Val Val
 225 230 235 240
 Ala Glu Thr Ala Asp Asp Val Leu Val Leu Tyr Ala Gly Arg Met Val
 245 250 255
 Glu Cys Ala Pro Ala Val Gln Met Phe His Asn Pro Ser His Pro Tyr
 260 265 270
 Thr Arg Asp Leu Leu Ala Ser Arg Pro Ser Leu Gln Pro Gln Gln Leu
 275 280 285
 Gly Ser Phe Asn Pro Ile Pro Gly Gln Pro Pro His Tyr Thr Ala Phe
 290 295 300
 Pro Ser Gly Cys Arg Tyr His Pro Arg Cys Ser Lys Ile Leu Asn Arg
 305 310 315 320
 Cys Ser Ala Glu Ala Pro Glu Ile Tyr Pro Val Arg Glu Gly His Lys
 325 330 335
 Val Arg Cys Trp Leu Tyr Asp Asp
 340

<210>724

<211>324

<212>PRT

<213>Chlamydia pneumoniae

<400>724

Met Thr Thr Asn Phe Pro Gln Pro Leu Ile Gln Ala Thr Ser Leu Thr
 1 5 10 15
 Lys His Tyr Tyr Lys Arg Ser Phe Trp Phe Gln Gly Lys Thr Ile Ala
 20 25 30
 Ser Arg Pro Val Asp Asp Val Ser Phe Ser Leu Tyr Ser Arg Arg Ala
 35 40 45
 Val Gly Leu Ile Gly Glu Ser Gly Ser Gly Lys Ser Thr Leu Ala Leu
 50 55 60
 Ala Leu Ala Gly Leu Leu Pro Leu Thr Ser Gly Phe Leu Thr Phe Asn
 65 70 75 80
 Gly Thr Pro Ile Lys Leu His Ser Lys His Gly Arg His Gln Leu Arg
 85 90 95
 Ser Gln Val Arg Leu Val Phe Gln Asn Pro Gln Ala Ser Leu Asn Pro
 100 105 110
 Arg Lys Thr Ile Leu Asp Ser Leu Gly His Ser Leu Leu Tyr His Lys
 115 120 125
 Leu Val Pro Lys Glu Lys Val Leu Ala Thr Val Arg Glu Tyr Leu Glu
 130 135 140
 Leu Val Gly Leu Ser Glu Glu Tyr Phe Tyr Arg Tyr Pro His Gln Leu
 145 150 155 160

Ser Gly Gly Gln Gln Gln Arg Val Ser Ile Ala Arg Ala Leu Leu Gly
 165 170 175
 Val Pro Gln Leu Ile Ile Cys Asp Glu Ile Val Ser Ala Leu Asp Leu
 180 185 190
 Ser Ile Gln Ala Gln Ile Leu Asn Met Leu Ala Glu Leu Gln Lys Lys
 195 200 205
 Leu Ser Leu Thr Tyr Leu Phe Ile Ser His Asp Leu Ala Val Val Arg
 210 215 220
 Ser Phe Cys Thr Glu Val Phe Ile Met Tyr Lys Gly Gln Ile Val Glu
 225 230 235 240
 Lys Gly Asn Thr Lys Arg Ile Phe Ser Asp Pro Gln His Pro Tyr Thr
 245 250 255
 Arg Met Leu Leu Asn Ala Gln Leu Pro Glu Thr Pro Asp Gln Arg Gln
 260 265 270
 Ser Lys Pro Ile Phe Gln Glu Tyr His Lys Asp Ser Glu Glu Ser Cys
 275 280 285
 Ser Thr Gly Cys Tyr Phe Tyr Asn Arg Cys Pro Gln Lys Gln Glu Ala
 290 295 300
 Cys Lys Ser Glu Ile Ile Pro Asn Gln Gly Asp Ala His His Thr Tyr
 305 310 315 320
 Arg Cys Ile His

<210>725

<211>143

<212>PRT

<213>Chlamydia pneumoniae

<400>725

Ala Tyr Cys Trp Arg Ala Arg Trp Arg Ala Met Gln Leu Ala Gly Ala
 1 5 10 15
 Thr Thr Ile Pro Val Ile Leu Lys His Val Ile Ala Asp Gly Thr Ala
 20 25 30
 Ala Glu Ala Thr Leu Ile Glu Asn Ile Gln Arg Val Asn Leu Asn Pro
 35 40 45
 Ile Glu Met Ala Glu Ala Phe Lys Arg Leu Ile His Val Phe Gly Leu
 50 55 60
 Thr Gln Asp Xaa Val Ala Tyr Lys Val Gly Lys Lys Arg Ser Thr Val
 65 70 75 80
 Ala Asn Tyr Leu Arg Leu Leu Ala Leu Ser Lys Thr Ile Gln Glu Ser
 85 90 95
 Leu Leu Gln Gly Gln Ile Thr Leu Gly His Ala Lys Val Ile Leu Thr
 100 105 110
 Leu Glu Asp Pro Ile Leu Arg Glu Lys Leu Asn Glu Ile Ile Ile Gln
 115 120 125
 Glu His Leu Ala Val Arg Glu Ala Glu Leu Ile Ala Asn Ser Leu
 130 135 140

<210>726

<211>91

<212>PRT

<213>Chlamydia pneumoniae

<400>726

Glu Lys Ser Gly Asp Ile Val Thr Glu Glu Ile Ser Lys Asp Thr Ile
 1 5 10 15
 Ile Glu Val Ala Ile Asp Asp Ile Arg Val Ser Pro Phe Gln Pro Arg
 20 25 30
 Arg Val Phe Ser Asn Glu Glu Leu Gln Glu Leu Ile Ala Ser Ile Lys
 35 40 45
 Ala Val Gly Leu Ile His Pro Val Val Arg Glu Ile Cys Thr Gly
 50 55 60
 Asp Arg Val Leu Tyr Tyr Glu Leu Ile Ala Gly Glu Pro Ala Gly Gly
 65 70 75 80
 Pro Cys Ser Ser Gln Glu Gln Leu Arg Tyr Leu
 85 90

<210>727

<211>238

<212>PRT

<213>Chlamydia pneumoniae

<400>727

```

Arg Lys Ile His Lys Asn Leu Arg His Ala Tyr Arg Phe Ser Thr Pro
 1           5           10           15
Asn Cys Arg Ser Phe Met Gln Lys Leu Val His Asn Ile Trp Lys Lys
          20           25           30
Phe Tyr Ser Phe Ser Ser Ala Ile Cys Ile Val Leu Ala Ser
          35           40           45
Phe Leu Ser Leu Lys Ile Val Ser Asn Thr Tyr Lys His Ser Gln Ala
          50           55           60
Lys Arg Asn Ser Ile Leu Leu Thr Arg Ala Ala Glu Val Ala Val
 65           70           75           80
Ser Gln Gly Phe Leu Pro Ser Lys Ser Ala Leu Ser Ser Leu Glu Gln
          85           90           95
Ala Tyr His Leu Gly Gly Glu Ser Met Lys Pro Tyr Ala Gly Phe Leu
          100          105          110
Ala Ser Cys Phe Tyr Ile His Asn Glu Pro Leu Arg Gly Ala Tyr Tyr
          115          120          125
Ala Gly Leu Ala Tyr Asn Asn Ser Gln Ala Leu Gln Leu Pro His Pro
          130          135          140
Ile Gln Lys Leu Leu Lys Glu Ile Ser Glu Ala Gln Ala Asp Gln Leu
 145          150          155          160
Tyr Asp Val Ala Leu Ser Lys Ser Tyr Gln Leu Leu Gln Thr Ala Asn
          165          170          175
Ser Ser Pro Glu Tyr Pro Thr Leu Ser Phe Leu Thr Leu Leu Arg Val
          180          185          190
Ile Glu Leu Lys Glu Leu Leu His Gln Asp Val Ser Gln Asp Phe Ala
          195          200          205
Ala Leu Lys Ser Ser Pro Leu Phe His Gln Phe Glu Arg Met Tyr Ser
          210          215          220
Asp Gly Glu Trp Thr Leu Ser Lys Arg Phe Gly Lys Lys Gly
 225          230          235

```

<210>728

<211>289

<212>PRT

<213>Chlamydia pneumoniae

<400>728

```

Gly Arg Thr Pro Cys Glu Cys Phe Ile Leu Gly Asp Ser Cys Arg Arg
 1           5           10           15
Arg Gly Ser Leu Val Lys Lys Ile Arg Val His Asp Ser Gly Leu Ile
          20           25           30
Asp Leu Asp Asp Leu Glu Lys Leu Leu Asn Glu Gly Ala Gln Phe Val
          35           40           45
Ser Ile Pro His Val Ser Asn Val Thr Gly Cys Val Gln Pro Leu Gln
          50           55           60
Gln Val Ala Glu Leu Val His Arg Tyr Asp Ala Tyr Leu Ala Val Asp
 65           70           75           80
Gly Ala Gln Gly Ala Pro His Leu Pro Ile Asp Val Gln Leu Trp Asp
          85           90           95
Val Asp Phe Tyr Val Phe Ser Ser His Lys Ile Tyr Gly Pro Thr Gly
          100          105          110
Ile Gly Val Leu Tyr Gly Lys Lys Asp Leu Leu Asp Gln Leu Pro Pro
          115          120          125
Val Glu Gly Gly Gly Asp Met Val Ala Ile Tyr Asp His Gln Asn Pro
          130          135          140
Glu Tyr Leu Pro Ala Pro Met Lys Phe Glu Ala Gly Thr Pro Asn Ile
 145          150          155          160
Ala Gly Val Leu Gly Leu Gly Ala Ala Leu Asp Tyr Leu Asp Gly Leu
          165          170          175
Ser Ala Lys Phe Ile Tyr Asp Lys Glu Ile Ala Leu Thr Thr Tyr Leu
          180          185          190
His Lys Glu Leu Leu Glu Ile Pro Gly Val Glu Ile Leu Gly Pro Ser
          195          200          205

```

Ile Glu Glu Pro Arg Gly Ala Leu Ile Gly Met Thr Ile Asp Gly Ala
 210 215 220
 His Pro Leu Asp Leu Gly Phe Leu Leu Asp Leu Arg Gly Ile Ala Val
 225 230 235 240
 Arg Thr Gly His Gln Cys Ala Gln Pro Ala Met Glu Arg Trp Asn Val
 245 250 255
 Gly His Val Leu Arg Val Ser Leu Gly Ile Tyr Asn Asp Glu Asp Asp
 260 265 270
 Ile Asp Gln Phe Ile Leu Val Leu Gln Asp Ser Leu Asp Lys Ile Arg
 275 280 285
 Arg

<210>729

<211>137

<212>PRT

<213>Chlamydia pneumoniae

<400>729

Ser Val Lys Asn Leu Lys Glu Asp Phe Pro Ile Phe Ala Ala Lys Ala
 1 5 10 15
 Lys Glu Asn Glu Pro Phe Ile Tyr Leu Asp Ser Ala Ala Thr Thr Gln
 20 25 30
 Lys Pro Gln Gln Val Ile Asp Ala Val Ala Asn Phe Tyr Thr Ser Ser
 35 40 45
 Tyr Ala Thr Val Asn Arg Ala Ile Tyr Ser Ser Ser Arg Asn Val Thr
 50 55 60
 Glu Ala Tyr Ala Ala Val Arg Glu Lys Val Arg Lys Trp Val Ser Ala
 65 70 75 80
 Ala Ser Asp Ser Glu Ile Val Phe Thr Arg Gly Thr Thr Ala Gly Leu
 85 90 95
 Asn Leu Leu Ala Ile Ser Val Asn Asp Leu Trp Ile Pro Lys Gly Gly
 100 105 110
 Val Val Leu Val Ser Glu Ala Glu His His Ala Asn Val Leu Ser Trp
 115 120 125
 Glu Ile Pro Val Gly Gly Glu Val Leu
 130 135

<210>730

<211>410

<212>PRT

<213>Chlamydia pneumoniae

<400>730

Arg His Phe Leu Leu Leu Leu Arg Val Leu Leu Cys Lys Lys Leu Arg
 1 5 10 15
 Lys Leu Ala Thr Leu Asn Ile Ala Ser Ser Leu Leu Gln Lys Arg Cys
 20 25 30
 Leu Val Ala Phe Leu Gly Phe Arg Ser Phe Leu Phe Phe Leu Ile Ala
 35 40 45
 Asn Asn Leu Ala Thr Gly Ala Ser Glu Leu Ile Lys Gln His Trp Leu
 50 55 60
 His Asn Asn His Ser Leu Ala Phe Glu Cys Ile Leu Ile Asn Gly Lys
 65 70 75 80
 Tyr Glu Pro Ser Leu Ser Gln Leu Pro Glu Gly Val Ile Val Cys Gly
 85 90 95
 Ile Asp Glu Ala Arg Gly Ser Leu Ser Ser Phe Met Gln Gly Phe Asp
 100 105 110
 Val Asn Lys His Pro Leu Ala Phe Leu Asn Ala Val Cys Ser Glu Asp
 115 120 125
 Arg Gly Val Val Ile Tyr Ile Pro Glu Glu Met Gln Thr Ser Asp Pro
 130 135 140
 Ile Phe Val Arg His Ile Ser Phe Pro Thr Val Ser Asp His Asp Val
 145 150 155 160
 Ile Phe Ser Pro Arg Ile Val Val Ile Leu Gly Gln Arg Ala Ser Ala
 165 170 175
 Gln Ile Gln Ile Ser His Asp Val Asp Leu Glu Met Val Gly Ser Ser
 180 185 190

Lys Thr Ile Val Asn Gly Val Thr Glu Leu Phe Val Gly Glu Gly Ala
 195 200 205
 Asp Leu Thr Val Phe Met Val Pro Gly Tyr Ser Glu Glu Asp Thr Leu
 210 215 220
 Ser Trp Ser Thr Ile Ala Thr Val Glu Lys Asp Ala Ile Cys Arg Met
 225 230 235 240
 Thr Gln Asn Leu Leu Glu Ser Cys Gln Gly Phe Gly Trp Phe Asp Asn
 245 250 255
 Thr Ser Tyr Ile Val Gly Lys Lys Gly His Ala Glu Ser Leu Val Leu
 260 265 270
 Val Gln Ser Pro Arg Lys Thr Trp Val Asn Asn Leu Met Ser His Asp
 275 280 285
 Ala Glu Glu Thr Val Ser Arg Gln Asn Ile Lys Ser Ile Leu Tyr Ser
 290 295 300
 Gly His Phe Leu Phe Glu Gly Thr Ile Ser Ile Ser Ser Gln Gly Asp
 305 310 315 320
 Leu Ser Asp Ala Asn Gln Lys His Asp Thr Leu Leu Leu Ser Ser Glu
 325 330 335
 Ala Arg Val Ser Thr Phe Pro Arg Leu Glu Ile Glu Thr Asp Glu Val
 340 345 350
 Lys Ala Ser His Gly Ala Thr Val Gly Pro Leu Asp Pro Gln Gln Ile
 355 360 365
 Phe Tyr Met Arg Ser Arg Gly Met Thr Glu Ala Glu Ala Gln Glu Lys
 370 375 380
 Leu Ile His Gly Phe Leu Lys Gln Gly Leu Val Ser Asp Thr Phe Leu
 385 390 395 400
 Gly Ser Ser Phe Gln Leu Asn Gln Thr Ser
 405 410

<210>731

<211>256

<212>PRT

<213>Chlamydia pneumoniae

<400>731

Met Leu Lys Ile Lys His Leu His Ala Ser Cys Asn Asp Val Lys Ile
 1 5 10 15
 Leu Asp Asp Phe Asn Leu Asn Ile Gln Pro Gly Xaa Met His Val Ile
 20 25 30
 Met Gly Pro Asn Gly Ala Gly Lys Ser Thr Leu Ala Lys Ile Leu Ala
 35 40 45
 Gly Asp Glu Ser Val Leu Val Ser Ser Gly Glu Ile Ala Leu Gln Glu
 50 55 60
 Gln Asn Leu Leu Ser Met Leu Pro Glu Glu Arg Ser Arg Ala Gly Leu
 65 70 75 80
 Phe Val Gly Phe Gln Met Pro Pro Glu Ile Pro Gly Val Asn Asn Lys
 85 90 95
 Met Phe Leu Arg Asp Ala Tyr Asn Ala Arg Arg Arg Ala Asn Gln Glu
 100 105 110
 Gly Asp Ile Ser Ile Asp Glu Phe Asn Thr Leu Leu Ser Thr Val Leu
 115 120 125
 Glu Thr Tyr Glu Tyr Asn Ala Thr Thr Asp Leu Phe Leu Asp Arg Asn
 130 135 140
 Val Asn Glu Gly Phe Ser Gly Gly Glu Arg Lys Arg Asn Glu Ile Cys
 145 150 155 160
 Gln Met Leu Val Leu Glu Pro Glu Met Val Leu Leu Asp Glu Pro Asp
 165 170 175
 Ser Gly Leu Asp Val Asp Ala Leu Arg Leu Ile Cys Arg Val Leu Glu
 180 185 190
 Lys Tyr Arg Glu Leu His Pro Thr Ser Ser Leu Cys Ile Val Thr His
 195 200 205
 Asn Pro Lys Leu Gly Asn Leu Ile Arg Pro Asp Val Val His Leu Leu
 210 215 220
 Leu Asp Gly Arg Val Ala Leu Ser Gly Asp Val Ser Leu Met His Glu
 225 230 235 240
 Leu Glu Ala Lys Ser Tyr Gln Glu Val Thr Lys Arg Val Ala Trp Arg

245 250 255
 <210>732
 <211>484
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>732
 Met Gly Glu Ser Val Lys Val Phe Leu Glu Glu Arg Glu Asp Tyr Pro
 1 5 10 15
 Tyr Gly Phe Val Thr Pro Ile Glu Ser Gln Gly Leu Thr Arg Gly Leu
 20 25 30
 Ser Glu Glu Thr Ile Glu Glu Ile Ala Ala Leu Arg Asn Glu Pro Gln
 35 40 45
 Phe Ile Ile Asp Phe Arg Leu Gln Ala Tyr Arg Tyr Trp Lys Gln Leu
 50 55 60
 His Glu Pro Ala Trp Ala Arg Leu His Tyr Gly Pro Ile Ala Tyr Asp
 65 70 75 80
 Asp Ile Val Tyr Phe Ser Ser Pro Lys Gln Lys Lys Pro Leu Gly Arg
 85 90 95
 Leu Glu Asp Ala Asp Pro Glu Ile Leu Asp Thr Phe Lys Lys Leu Gly
 100 105 110
 Ile Pro Leu Asp Glu Gln Lys Arg Leu Leu Asn Val Glu Asn Val Ala
 115 120 125
 Val Asp Leu Val Phe Asp Ser Val Ser Ile Gly Thr Thr Phe Lys Glu
 130 135 140
 Ala Leu Glu Lys Ala Gly Val Ile Phe Cys Ser Leu Gly Glu Ala Ile
 145 150 155 160
 Gln Glu His Pro Asn Leu Val Lys Lys Tyr Leu Gly Ser Val Val Ser
 165 170 175
 His Arg Asp Asn Phe Phe Ala Ala Leu Asn Ala Ala Val Phe Ser Asp
 180 185 190
 Gly Ser Phe Val Tyr Val Pro Lys Gly Val Lys Cys Pro Met Asp Ile
 195 200 205
 Ser Thr Tyr Phe Arg Ile Asn Asn Lys Glu Ala Gly Gln Phe Glu Arg
 210 215 220
 Thr Leu Ile Val Val Glu Asp Gly Gly Tyr Ala Ser Tyr Leu Glu Gly
 225 230 235 240
 Cys Thr Ala Pro Ala Tyr Ser Ser Asn Gln Leu His Ala Ala Val Val
 245 250 255
 Glu Leu Val Ala His Glu His Ala Val Ile Arg Tyr Ser Thr Val Gln
 260 265 270
 Asn Trp Tyr Ala Gly Asp Lys Lys Thr Gly Lys Gly Gly Ile Tyr Asn
 275 280 285
 Phe Val Thr Lys Arg Gly Leu Cys Ala Gly Tyr Arg Ser Lys Ile Ser
 290 295 300
 Trp Ser Gln Val Glu Val Gly Ala Ala Ile Thr Trp Lys Tyr Pro Ser
 305 310 315 320
 Cys Ile Leu Lys Gly Asp Glu Ser Val Gly Glu Phe Tyr Ser Val Ala
 325 330 335
 Leu Thr Ser Gly Lys Met Gln Ala Asp Thr Gly Thr Lys Met Leu His
 340 345 350
 Val Gly Lys Arg Thr Thr Ser Thr Val Ile Ser Lys Gly Ile Ser Ser
 355 360 365
 Asp Glu Ser Lys Asn Thr Phe Arg Ser Leu Val Ser Leu Gly Lys Lys
 370 375 380
 Ala Glu His Ser Ser Asn Tyr Thr Gln Cys Asp Ser Met Leu Ile Gly
 385 390 395 400
 Lys Ala Ser Gly Ala Tyr Thr Asp Pro Lys Ile Val Val Glu Asn Ser
 405 410 415
 Thr Ser Ser Ile Glu His Glu Ala Thr Thr Ser Lys Leu Arg Glu Asp
 420 425 430
 Gln Leu Leu Tyr Leu Arg Ser Arg Gly Leu Ser Pro Glu Glu Ala Val
 435 440 445
 Ser Leu Val Ile His Gly Phe Cys Arg Glu Ile Ile Glu Gln Leu Pro
 450 455 460

Leu Glu Phe Ala Gln Glu Ala Ser Lys Leu Leu Leu Ile Lys Leu Glu
 465 470 475 480
 Asn Ser Val Gly

<210>733

<211>351

<212>PRT

<213>Chlamydia pneumoniae

<400>733

Leu Arg Ser Thr Asn His Val Leu Gly Glu Ile Ser Met Glu Glu Ala
 1 5 10 15
 Ala Lys His Leu Ala Lys Glu Phe Leu Cys Ser Gly Ile Asn Leu Phe
 20 25 30
 Leu Ser Gly Glu Tyr Glu Gln Ala Glu Lys Arg Leu Lys Glu Thr Leu
 35 40 45
 Glu Leu Asp Ser Thr Ala Ala Leu Ala Tyr Cys Tyr Leu Gly Ile Ile
 50 55 60
 Ala Leu Glu Thr Gly Arg Val Ser Glu Ala Leu Asn Trp Cys Ser Lys
 65 70 75 80
 Gly Leu Ala Ser Glu Pro Gly Asp Ser Tyr Leu Arg Tyr Cys Tyr Gly
 85 90 95
 Val Ala Leu Asp Arg Gly Asn Gln Tyr Glu Ala Ala Ile Glu Gln Tyr
 100 105 110
 Ser Ala Tyr Val Ala Leu His Pro Asp Asp Val Glu Cys Trp Phe Ser
 115 120 125
 Leu Gly Ser Val Tyr His Arg Leu Lys Arg Leu Gln Glu Ala Leu Asp
 130 135 140
 Cys Phe Asp Lys Ile Leu Ala Leu Asp Pro Trp Asn Pro Gln Ser Leu
 145 150 155 160
 Tyr Asn Lys Ala Val Ile Leu Ser Glu Met Asp Asp Glu Ala Glu Ser
 165 170 175
 Ile Arg Leu Leu Glu Val Ala Val Ala Lys Asn Pro Leu Tyr Trp Lys
 180 185 190
 Ala Trp Val Lys Leu Gly Phe Leu Leu Ser Arg Ser Lys Arg Trp Asp
 195 200 205
 Lys Ala Thr Glu Ala Tyr Glu Arg Val Val Gln Leu Arg Pro Asp Leu
 210 215 220
 Ser Asp Gly His Tyr Asn Leu Gly Leu Cys Tyr Leu Thr Leu Asp Lys
 225 230 235 240
 Thr Arg Leu Ala Leu Lys Ala Phe Gln Glu Ala Leu Phe Leu Asn Ala
 245 250 255
 Glu Asp Ala Asp Ala His Phe Tyr Val Gly Leu Ala His Leu Asp Leu
 260 265 270
 Lys Gln Met Arg Glu Ala Tyr Glu Ala Phe Asn Ser Ala Leu Ser Ile
 275 280 285
 Asn Leu Glu His Glu Arg Ala His Tyr Leu Leu Gly Tyr Leu His His
 290 295 300
 Met Gln Gly Glu Thr Asp Lys Ala Thr Lys Glu Leu Leu Phe Leu Gln
 305 310 315 320
 Lys Lys Asp Ser Thr Phe Ala Pro Leu Leu Gln Lys Thr Val Val Ser
 325 330 335
 Asp Pro Ser Ser Met Gln Phe Glu Arg Arg Leu Asp Thr Ile Ser
 340 345 350

<210>734 -

<211>660

<212>PRT

<213>Chlamydia pneumoniae

<400>734

Leu Pro Leu Thr Phe Asp Cys Phe Leu Asp Phe Leu Phe Pro Glu Asn
 1 5 10 15
 Ser Val Ile Lys Leu Gln Leu Lys Arg Asn Ser Phe Val Gly Gln Ala
 20 25 30
 Ile Glu Val Gln Asn Leu Val Thr Arg Leu Leu Ser Leu Phe Pro Tyr
 35 40 45

Glu 50 Glu Gly Thr Cys Pro Cys Ser Ala Ile Phe Asp Ala Val Phe Pro
 65 Asn Glu Glu Gly His Ile Leu Ile Gln Glu Val Ile Ser Leu Gln Glu
 70 75 80
 Gln Lys Trp Ile Met Glu Cys Leu Asn Gln His Lys Ala Asp Ile Glu
 85 90 95
 Glu Leu Lys Glu Ala Leu Asp Gln Val Phe Asn Glu Leu Pro Ala Asn
 100 105 110
 Tyr Asp Lys Ile Leu Tyr Thr Asp Ile Leu Arg Leu Ile Val Asp Pro
 115 120 125
 Glu Arg Phe Ser Pro Val Leu Pro Ser Glu Val His Arg Leu Ser Leu
 130 135 140
 Ser Glu Phe Thr Glu Leu Gln Gly Arg Tyr Val Val Leu Arg Ser Ala
 145 150 155 160
 Phe Ser Thr Ile Leu Glu Asp Ala Phe Ile Glu Val His Phe Lys Ser
 165 170 175
 Trp Arg Lys Ser Glu Phe Leu Gln Tyr Leu Ala Ala Lys Arg Gln Glu
 180 185 190
 Glu Ala Leu Arg Lys Gln Arg Tyr Pro Thr Pro Tyr Val Asp Tyr Leu
 195 200 205
 Glu Glu Glu Lys Thr Arg Gln Tyr Lys Met Phe Cys Gln Glu His Leu
 210 215 220
 Asp Thr Phe Leu Ala Tyr Leu Phe Ser Lys Thr Pro Tyr Lys Glu Gly
 225 230 235 240
 Leu Glu Pro Tyr Tyr Asp Ile Leu Asp Leu Trp Ile Asn Glu Leu Asp
 245 250 255
 Asn Gly Ala His Arg Ala Leu Ser Trp Asn Glu His Tyr Leu Phe Leu
 260 265 270
 Lys Glu Arg Val Ser His Leu Ser Glu His Leu Pro Ala Leu Phe Ser
 275 280 285
 Thr Phe Arg Glu Phe Asn Glu Leu Gln Arg Pro Leu Leu Gly Lys Tyr
 290 295 300
 Pro Ile Ser Ile Val Arg Asn Lys Arg Gln Thr Glu Gln Asp Leu Ala
 305 310 315 320
 Ala Ser Phe Tyr Pro Val Tyr Gly Tyr Gly Tyr Leu Arg Pro His Ala
 325 330 335
 Tyr Gly Gln Ala Ala Thr Leu Gly Ser Ile Phe Lys Leu Val Ser Ala
 340 345 350
 Tyr Ser Val Leu Ser Gln Arg Ile Leu Trp Gly His Asn Glu Glu Pro
 355 360 365
 Ala Asn Pro Leu Val Ile Ile Asp Lys Asn Ser Phe Gly Tyr Arg Ser
 370 375 380
 Ser Lys Pro His Val Gly Phe Phe Lys Asp Gly Thr Pro Ile Pro Thr
 385 390 395 400
 Phe Phe Arg Gly Gly Ser Leu Pro Gly Asn Asp Phe Met Gly Arg Gly
 405 410 415
 Phe Ile Asp Leu Val Ser Ala Leu Glu Met Ser Ser Asn Pro Tyr Phe
 420 425 430
 Ser Leu Leu Val Gly Glu Gly Leu Gly Asp Pro Glu Asp Leu Ala Asp
 435 440 445
 Ala Ala Ser Leu Phe Gly Phe Gly Glu Lys Thr Gly Leu Gly Leu Pro
 450 455 460
 Gly Glu Tyr Ala Gly Arg Val Pro His Asp Leu Ala Tyr Asn Arg Ser
 465 470 475 480
 Gly Leu Tyr Ala Thr Ala Ile Gly Gln His Thr Leu Val Val Thr Pro
 485 490 495
 Leu Gln Thr Ala Val Met Leu Ala Ser Leu Val Asn Gly Gly Val Val
 500 505 510
 Tyr Val Pro Lys Leu Leu Leu Gly Glu Trp Glu Gly Glu His Val Ser
 515 520 525
 Tyr Leu Ser Ser Lys Lys Lys Arg Thr Ile Phe Met Pro Asp Ala Val
 530 535 540
 Val Glu Val Leu Lys Thr Gly Met Arg Asn Val Ile Trp Gly Gln Tyr
 545 550 555 560

Gly Thr Ala Arg Ala Ile Gln Ser Gln Phe Pro Pro Gln Leu Leu Ser
 565 570 575
 Arg Ile Ile Gly Lys Thr Ser Thr Ala Glu Ser Ile Met Arg Val Gly
 580 585 590
 Leu Asp Arg Glu Tyr Gly Thr Met Lys Met Lys Asp Ile Trp Phe Ala
 595 600 605
 Ala Val Gly Phe Ser Asp Gln Asp Leu Ser Leu Pro Thr Ile Val Val
 610 615 620
 Ile Val Tyr Leu Arg Leu Gly Glu Phe Gly Arg Asp Ala Ala Pro Met
 625 630 635 640
 Ala Val Lys Met Ile Asp Met Trp Glu Lys Ile Gln Gln Arg Glu Ser
 645 650 655
 Phe Leu Arg Gly
 660

<210>735

<211>139

<212>PRT

<213>Chlamydia pneumoniae

<400>735

Glu Lys Trp Val Leu Arg His Cys Trp Asp Ser Lys Leu Arg Gly Lys
 1 5 10 15
 Ile Gly Lys Lys Pro Ile Leu Val Asp Arg Arg Gly Asn Phe Ile Gln
 20 25 30
 Glu Met Glu Gly Ala Val Pro Glu Ala Pro Gly Thr Lys Leu Gln Leu
 35 40 45
 Thr Leu Ser Ala Glu Leu Gln Ala Tyr Ala Asp Ala Leu Leu Leu Glu
 50 55 60
 Tyr Glu Lys Thr Glu Thr Phe Arg Ser Ala Lys Ser Leu Lys Lys Arg
 65 70 75 80
 Glu Lys Leu Pro Pro Leu Phe Pro Trp Ile Lys Gly Gly Ala Ile Ile
 85 90 95
 Ala Leu Asp Pro Asn Asn Gly Glu Ile Leu Ala Met Ala Ser Ser Pro
 100 105 110
 Arg Tyr Arg Asn Asn Asp Phe Val Asn Ala Lys Val Ala Glu Asp Ser
 115 120 125
 Lys Ala Val Arg Ser Ser Ile Tyr Leu Asp Gly
 130 135

<210>736

<211>286

<212>PRT

<213>Chlamydia pneumoniae

<400>736

Phe Ser Asp Glu Ser Glu Ala His Asn Ile His Ser Met Lys Arg Pro
 1 5 10 15
 Lys Lys Phe Pro Ile Tyr Leu Ser Ile Ala Gln Lys Thr Asn Arg Leu
 20 25 30
 Leu Ser Gly Ile Val Ile Ala Phe Ala Val Ile Ala Leu Arg Leu Trp
 35 40 45
 Tyr Leu Ala Val Val Glu His Glu Gln Lys Leu Glu Glu Ala Tyr Lys
 50 55 60
 Pro Gln Ile Arg Val Leu Pro Gln Tyr Val Glu Arg Ala Thr Ile Cys
 65 70 75 80
 Asp Arg Phe Gly Lys Thr Leu Ala Val Asn Gln Leu Gln Tyr Asp Val
 85 90 95
 Ser Val Ala Tyr Gly Ala Ile Arg Asp Leu Pro Thr Arg Ala Trp Arg
 100 105 110
 Val Asp Glu His Gly His Lys Gln Leu Ile Pro Val Arg Lys His Tyr
 115 120 125
 Ile Met Cys Leu Ser Glu Leu Leu Ser Gln Glu Leu His Leu Asp Arg
 130 135 140
 Glu Ala Ile Glu Asp Ala Ile His Ala Lys Ala Ser Val Leu Gly Ser
 145 150 155 160
 Val Pro Tyr Leu Val Ala Ala Asn Val Ser Glu Arg Thr Tyr Leu Lys
 165 170 175

Leu Lys Met Leu Ser Lys Asp Trp Pro Gly Leu His Val C'lu Ala Val
 180 185 190
 Val Arg Arg His Tyr Pro Gln Glu Ser Val Ala Ser Asp Ile Leu Gly
 195 200 205
 Tyr Val Gly Pro Ile Ser Leu Gln Glu Tyr Lys Arg Val Thr Gln Glu
 210 215 220
 Leu Ser Gln Leu Arg Glu Cys Val Arg Ala Tyr Glu Glu Gly Glu Asp
 225 230 235 240
 Pro Lys Leu Pro Glu Gly Leu Ala Ser Ile Asp Gln Val Arg Ala Leu
 245 250 255
 Leu Glu Ser Val Glu Ser Asn Ala Tyr Ser Leu Asn Ala Leu Val Gly
 260 265 270
 Lys Met Gly Val Glu Ala Leu Leu Gly Leu Lys Ile Thr Arg
 275 280 285
 <210>737
 <211>391
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>737
 Val Ser Met Lys Lys Leu Leu Lys Ser Ala Leu Leu Ser Ala Ala Phe
 1 5 10 15
 Ala Gly Ser Val Gly Ser Leu Gln Ala Leu Pro Val Gly Asn Pro Ser
 20 25 30
 Asp Pro Ser Leu Leu Ile Asp Gly Thr Ile Trp Glu Gly Ala Ala Gly
 35 40 45
 Asp Pro Cys Asp Pro Cys Ala Thr Trp Cys Asp Ala Ile Ser Leu Arg
 50 55 60
 Ala Gly Phe Tyr Gly Asp Tyr Val Phe Asp Arg Ile Leu Lys Val Asp
 65 70 75 80
 Ala Pro Lys Thr Phe Ser Met Gly Ala Lys Pro Thr Gly Ser Ala Ala
 85 90 95
 Ala Asn Tyr Thr Thr Ala Val Asp Arg Pro Asn Pro Ala Tyr Asn Lys
 100 105 110
 His Leu His Asp Ala Glu Trp Phe Thr Asn Ala Gly Phe Ile Ala Leu
 115 120 125
 Asn Ile Trp Asp Arg Phe Asp Val Phe Cys Thr Leu Gly Ala Ser Asn
 130 135 140
 Gly Tyr Ile Arg Gly Asn Xaa Tyr Arg Phe Asn Leu Val Gly Leu Phe
 145 150 155 160
 Gly Val Lys Gly Thr Thr Val Asn Ala Asn Xaa Leu Pro Asn Val Ser
 165 170 175
 Leu Ser Asn Gly Val Val Glu Leu Tyr Thr Asp Thr Ser Phe Ser Trp
 180 185 190
 Ser Val Gly Ala Arg Gly Ala Leu Trp Glu Cys Gly Cys Ala Thr Leu
 195 200 205
 Gly Ala Glu Phe Gln Tyr Ala Gln Ser Lys Pro Lys Val Glu Glu Leu
 210 215 220
 Asn Val Ile Cys Asn Val Ser Gln Phe Ser Val Asn Lys Pro Lys Gly
 225 230 235 240
 Tyr Lys Gly Val Ala Phe Pro Leu Pro Thr Asp Ala Gly Val Ala Thr
 245 250 255
 Ala Thr Gly Thr Lys Ser Ala Thr Ile Asn Tyr His Glu Trp Gln Val
 260 265 270
 Gly Ala Ser Leu Ser Tyr Arg Leu Asn Ser Leu Val Pro Tyr Ile Gly
 275 280 285
 Val Gln Trp Ser Arg Ala Thr Phe Asp Ala Asp Asn Ile Arg Ile Ala
 290 295 300
 Gln Pro Lys Leu Pro Thr Ala Val Leu Asn Leu Thr Ala Trp Asn Pro
 305 310 315 320
 Ser Leu Leu Gly Asn Ala Thr Ala Leu Ser Thr Thr Asp Ser Phe Ser
 325 330 335
 Asp Phe Met Gln Ile Val Ser Cys Gln Ile Asn Lys Phe Lys Ser Arg
 340 345 350
 Lys Ala Cys Gly Val Thr Val Gly Ala Thr Leu Val Asp Ala Asp Lys

355 360 365
 Trp Ser Leu Thr Ala Glu Ala Arg Leu Ile Asn Glu Arg Ala Ala His
 370 375 380
 Val Ser Gly Gln Phe Arg Phe
 385 390
 <210>738
 <211>292
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>738
 Met Pro Leu Leu Thr Tyr Ser Asn Phe Glu Ile Glu Val Gln Ser Leu
 1 5 10 15
 Glu Ser Gln Ser Cys Lys Leu Thr Ile Lys Asp Leu Met Ser Ala Gly
 20 25 30
 Ala His Phe Gly His Gln Thr Arg Arg Trp Asn Pro Lys Met Lys Leu
 35 40 45
 Tyr Ile Phe Glu Glu Lys Asn Gly Leu Tyr Ile Ile Asn Leu Ala Lys
 50 55 60
 Thr Leu Gln Gln Leu Arg Asn Ala Leu Pro His Ile Arg Lys Val Ile
 65 70 75 80
 Gln Asp Asn Lys Thr Val Leu Phe Val Gly Thr Lys Lys Gln Ala Lys
 85 90 95
 Cys Val Ile Arg Glu Ala Ala Ile Glu Ala Gly Glu Phe Phe Ile Ala
 100 105 110
 Glu Arg Trp Leu Gly Gly Met Leu Thr Asn Met Thr Thr Ile Arg Asn
 115 120 125
 Ser Ile Lys Thr Leu Asp Lys Ile Glu Lys Asp Leu Ser Arg Asn Gln
 130 135 140
 Ala Tyr Leu Thr Lys Lys Glu Ala Ala Leu Leu Ala Lys Arg His Gln
 145 150 155 160
 Lys Leu Leu Arg Asn Leu Glu Gly Ile Arg Tyr Met Lys Lys Ala Pro
 165 170 175
 Gly Leu Leu Val Val Val Asp Pro Ser Tyr Glu Lys Ile Ala Val Ala
 180 185 190
 Glu Ala Lys Lys Leu Gly Ile Pro Val Leu Ala Leu Val Asp Thr Asn
 195 200 205
 Cys Asp Pro Thr Pro Ile Asp His Val Ile Pro Cys Asn Asp Asp Ser
 210 215 220
 Leu Lys Ser Ile Arg Leu Ile Ile Asn Val Ile Lys Glu Asn Ile Ile
 225 230 235 240
 Glu Ala Lys His Lys Leu Gly Ile Glu Ile Val Ser Pro Val Lys Ser
 245 250 255
 Leu Glu Val Pro Asp Leu Ser Ala Phe Glu Ser Ser Gln Asp Asp Glu
 260 265 270
 Ser Asp Glu Glu Asn Arg Glu Glu Asp Leu Leu Ala Lys Lys Phe Asp
 275 280 285
 Gly Glu Ala Asn
 290
 <210>739
 <211>282
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>739
 Met Ser Asp-Phe Ser Met Glu Thr Leu Lys Thr Leu Arg Gln Gln Thr
 1 5 10 15
 Gly Val Gly Leu Thr Lys Cys Lys Glu Ala Leu Glu Ala Cys Gly Gly
 20 25 30
 Asn Leu Glu Glu Ala Val Val Tyr Leu Arg Lys Leu Gly Leu Ala Ser
 35 40 45
 Ala Gly Lys Lys Glu His Arg Glu Thr Lys Glu Gly Ile Ile Ala Ala
 50 55 60
 Lys Thr Asp Ala Asn Gly Thr Ala Leu Ile Glu Val Asn Val Glu Thr
 65 70 75 80
 Asp Phe Val Ala Asn Asn Ala Val Phe Arg Glu Phe Val Ser Asn Leu

				85					90				95		
Leu	Asn	Asp	Ile	Leu	Lys	Tyr	Lys	Val	Asp	Thr	Val	Glu	Ala	Leu	Ser
			100						105				110		
Gln	Ala	Ala	Ser	Ser	Gln	Asp	Pro	Ser	Leu	Ser	Val	Asp	Glu	Leu	Arg
			115						120				125		
Ala	Val	Thr	Met	Gln	Thr	Val	Gly	Glu	Asn	Ile	Arg	Ile	Ser	Arg	Val
			130						135				140		
Ala	Tyr	Phe	Pro	Lys	Ala	Thr	Asn	Ser	Thr	Val	Gly	Ile	Tyr	Ser	His
			145						150				155		160
Gly	Asn	Gly	Lys	Thr	Val	Ala	Leu	Thr	Met	Leu	Ser	Gly	Ser	Ser	Thr
				165					170					175	
Ala	Asp	Ser	Leu	Ala	Lys	Asp	Ile	Ala	Met	His	Val	Val	Ala	Ala	Gln
			180						185				190		
Pro	Gln	Phe	Leu	Ser	Lys	Glu	Ser	Val	Pro	Ala	Glu	Ala	Ile	Ala	Lys
			195						200				205		
Glu	Lys	Glu	Val	Ile	Ala	Ser	Gln	Ile	Gln	Gly	Lys	Pro	Gln	Glu	Val
			210						215				220		
Ile	Glu	Lys	Ile	Val	Thr	Gly	Lys	Leu	Asn	Thr	Phe	Phe	Gln	Glu	Ala
			225						230				235		240
Cys	Leu	Leu	Glu	Gln	Pro	Phe	Ile	Lys	Asn	Ala	Asp	Leu	Ser	Ile	Gln
				245					250					255	
Ser	Leu	Ile	Asp	Asp	Phe	Ser	Lys	Thr	Ser	Gly	Ser	Ser	Val	Ala	Ile
			260						265					270	
Glu	Gln	Phe	Ile	Leu	Trp	Lys	Ile	Gly	Ala						
			275						280						

<210>740

<211>248

<212>PRT

<213>Chlamydia pneumoniae

<400>740

Met	Ala	Lys	Gln	Thr	Arg	Arg	Val	Leu	Phe	Lys	Ile	Ser	Gly	Glu	Ala
				5					10					15	
Leu	Ser	Lys	Asp	Ser	Ser	Asn	Arg	Ile	Asp	Glu	Met	Arg	Leu	Ser	Arg
			20						25				30		
Leu	Val	Ser	Glu	Leu	Arg	Ala	Val	Arg	Asn	Asn	Asp	Ile	Glu	Ile	Ala
			35						40				45		
Leu	Val	Ile	Gly	Gly	Gly	Asn	Ile	Leu	Arg	Gly	Leu	Ala	Glu	Gln	Lys
			50						55				60		
Glu	Leu	Gln	Ile	Asn	Arg	Val	Ser	Ala	Asp	Gln	Met	Gly	Met	Leu	Ala
			65						70				75		80
Thr	Leu	Ile	Asn	Gly	Met	Ala	Val	Ala	Asp	Ala	Leu	Lys	Ala	Glu	Asp
				85					90					95	
Ile	Pro	Cys	Leu	Leu	Thr	Ser	Thr	Leu	Ser	Cys	Pro	Gln	Leu	Ala	Asp
			100						105				110		
Leu	Tyr	Thr	Pro	Gln	Lys	Ser	Ile	Glu	Ala	Leu	Asp	Gln	Gly	Lys	Ile
			115						120				125		
Leu	Ile	Cys	Thr	Thr	Gly	Ala	Gly	Ser	Pro	Tyr	Leu	Thr	Thr	Asp	Thr
			130						135				140		
Gly	Ala	Ala	Leu	Arg	Ala	Cys	Glu	Leu	Asn	Val	Asp	Val	Leu	Ile	Lys
			145						150				155		160
Ala	Thr	Met	His	Val	Asp	Gly	Val	Tyr	Asp	Lys	Asp	Pro	Arg	Leu	Phe
				165					170					175	
Pro	Asp	Ala	Val	Lys	Tyr	Asp	Phe	Val	Ser	Tyr	Lys	Asp	Phe	Leu	Ser
			180						185				190		
Asn	Gln	Leu	Gly	Val	Met	Asp	Ala	Ser	Ala	Ile	Ser	Leu	Cys	Met	Asp
			195						200				205		
Ser	His	Ile	Pro	Ile	Arg	Val	Phe	Ser	Phe	Leu	Gln	His	Ser	Leu	Glu
			210						215				220		
Lys	Ala	Leu	Phe	Asp	Pro	Thr	Ile	Gly	Thr	Leu	Val	Ser	Glu	Asp	Val
			225						230				235		240
Asn	His	Val	Cys	Ser	Pro	Arg	His								
				245											

<210>741

<211>180

<212>PRT

<213>Chlamydia pneumoniae

<400>741

Met Ser Val Leu Gln Asp Thr Glu Lys Lys Met Ala Ala Ala Leu Asp
 1 5 10 15
 Phe Phe His Lys Glu Val Lys Ser Phe Arg Thr Gly Lys Ala His Pro
 20 25 30
 Ala Leu Val Glu Thr Val Val Val Asp Val Tyr Gly Thr Thr Met Arg
 35 40 45
 Leu Ser Asp Ile Ala Ser Ile Ser Val Ala Asp Leu Arg Gln Leu Val
 50 55 60
 Ile Ser Pro Tyr Asp Gly Asn Asn Ala Ser Ala Ile Ala Lys Gly Ile
 65 70 75 80
 Ile Ala Ala Asn Leu Asn Leu Gln Pro Glu Val Glu Gly Ser Ile Ile
 85 90 95
 Arg Ile Lys Val Pro Glu Pro Thr Ala Asp Tyr Arg Gln Glu Met Ile
 100 105 110
 Lys Gln Leu Arg Arg Lys Cys Glu Glu Ala Lys Ile Asn Val Arg Asn
 115 120 125
 Ile Arg Arg Glu Ala Asn Asp Lys Leu Lys Lys Asp Ser Ala Leu Thr
 130 135 140
 Glu Asp Val Val Lys Gly Asn Glu Lys Lys Ile Gln Glu Leu Thr Asp
 145 150 155 160
 Lys Phe Cys Lys Gln Leu Asp Glu Leu Thr Lys Gln Lys Glu Ala Glu
 165 170 175
 Ile Ala Ser Ile
 180

<210>742

<211>172

<212>PRT

<213>Chlamydia pneumoniae

<400>742

Leu Met Val His Ser Pro Thr His Gln Cys Tyr His Cys Gln Gln Pro
 1 5 10 15
 Ala Thr Ile Cys Tyr Thr Glu Ile Asp Lys Asp Lys Val Ile Arg Ser
 20 25 30
 Tyr Val Cys Ala Thr Cys Pro Cys Pro Ser His Tyr Tyr Asn Asn Glu
 35 40 45
 His Leu Ser Leu Ser Lys Gly Val Gly Val Leu Thr Leu Glu Cys Gly
 50 55 60
 Asn Cys Lys Thr Val Trp His Ser Lys Gln Asp Glu Gln Leu Leu
 65 70 75 80
 Gly Cys His Gln Cys Tyr Thr Asn Phe Lys Asn Gln Ile Thr Ser Lys
 85 90 95
 Leu Lys Ser Glu Arg Val Val Ser Ser Ser Phe Thr Met Glu Lys Gly
 100 105 110
 Gln Gly Ser Leu His Ile Gly Arg Ala Pro Gly Glu Ala Ser Asn Thr
 115 120 125
 Asn Pro Leu Leu Lys Leu Ile Ala Leu Asn Glu Ala Leu Gln Asp Thr
 130 135 140
 Leu Glu Arg Glu Asp Tyr Glu Gln Ala Ala Val Ile Arg Asp Gln Ile
 145 150 155 160
 Asn His Leu Lys Thr Lys Asn Pro Asp Asp Pro Ser
 165 170

<210>743

<211>358

<212>PRT

<213>Chlamydia pneumoniae

<400>743

Met Thr Leu Pro Asn Asp Leu Leu Glu Thr Leu Val Lys Arg Lys Glu
 1 5 10 15
 Ser Pro Gln Ala Asn Lys Val Trp Pro Val Thr Thr Phe Ser Leu Ala
 20 25 30
 Arg Asn Leu Ser Val Ser Lys Phe Leu Pro Cys Leu Ser Lys Glu Gln

35	40	45
Lys Leu Glu Ile Leu Gln Phe Ile Thr Ser His Phe Asn His Ile Glu		
50	55	60
Gly Phe Gly Glu Phe Ile Val Leu Pro Leu Lys Asp Thr Pro Leu Trp		
65	70	75
Gln Lys Glu Phe Leu Glu His Phe Leu Leu Pro Tyr Asp Leu Val		
85	90	95
Gly Asn Pro Glu Gly Glu Ala Leu Val Val Ser Arg Ser Gly Asp Phe		
100	105	110
Leu Ala Ala Ile Asn Phe Gln Asp His Leu Val Leu His Gly Ile Asp		
115	120	125
Phe Gln Gly Asn Val Glu Lys Thr Leu Asp Gln Leu Val Gln Leu Asp		
130	135	140
Ser Tyr Leu His Ser Lys Leu Ser Phe Ala Phe Ser Ser Glu Phe Gly		
145	150	155
Phe Leu Thr Thr Asn Pro Lys Asn Cys Gly Thr Gly Leu Lys Ser Gln		
165	170	175
Cys Phe Leu His Ile Pro Ala Leu Leu Tyr Ser Lys Glu Phe Thr Asn		
180	185	190
Leu Ile Asp Glu Glu Val Glu Ile Ile Thr Ser Ser Leu Leu Leu Gly		
195	200	205
Val Thr Gly Phe Pro Gly Asn Ile Val Val Leu Ser Asn Arg Cys Ser		
210	215	220
Leu Gly Leu Thr Glu Glu Leu Leu Leu Ser Ser Leu Arg Ile Thr Ala		
225	230	235
Ser Lys Leu Ser Val Ala Glu Val Ala Ala Lys Lys Arg Leu Ser Glu		
245	250	255
Glu Asn Ser Gly Asp Leu Lys Asn Leu Ile Leu Arg Ser Leu Gly Leu		
260	265	270
Leu Thr His Ser Cys Gln Leu Glu Leu Lys Glu Thr Leu Asp Ala Leu		
275	280	285
Ser Trp Ile Gln Leu Gly Ile Asp Leu Gly Leu Ile Lys Val Thr Glu		
290	295	300
Asn His Pro Leu Trp Asn Pro Leu Phe Trp Gln Ile Arg Arg Ala His		
305	310	315
Leu Ala Leu Gln Lys Gln Ala Glu Asn Ser Arg Asp Leu Gln Lys Asp		
325	330	335
Thr Ile Ser His Leu Arg Ala Ser Val Leu Lys Glu Leu Thr Lys Gly		
340	345	350
Leu Ser Pro Glu Ser Phe		
355		

<210>744

<211>561

<212>PRT

<213>Chlamydia pneumoniae.

<400>744

Ser Cys Cys Gly Tyr Pro Ser Val Pro Ser Leu Gln Arg Gln Pro Ser		
1	5	10
Ala Ala Val Asn Ile Ile Gln Pro Leu Leu Ser His Asp Ala Ile Val		
20	25	30
Ser Ala Ser Glu Ala Thr Arg His Val Ile Ile Ser Asp Ile Ala Gly		
35	40	45
Asn Val Asp Lys Val Ser Asp Leu Leu Ala Ala Leu Asp Cys Pro Gly		
50	55	60
Thr Ser Val Asp Met Thr Glu Tyr Glu Val Lys Tyr Ala Asn Pro Ala		
65	70	75
Ala Leu Val Ser Tyr Cys Gln Asp Val Leu Gly Thr Leu Ala Glu Asp		
85	90	95
Asp Ala Phe Gln Met Phe Ile Gln Pro Gly Thr Asn Lys Ile Phe Val		
100	105	110
Val Ser Ser Pro Arg Leu Ala Asn Lys Ala Glu Gln Leu Leu Lys Ser		
115	120	125
Leu Asp Val Pro Glu Met Ala His Thr Leu Asp Asp Pro Ala Ser Thr		
130	135	140

Ala Leu Ala Leu Gly Gly Thr Gly Thr Thr Ser Pro Lys Ser Leu Arg
 145 150 155 160
 Phe Phe Met Tyr Lys Leu Lys Tyr Gln Asn Gly Glu Val Ile Ala Asn
 165 170 175
 Ala Leu Gln Asp Ile Gly Tyr Asn Leu Tyr Val Thr Thr Ala Met Asp
 180 185 190
 Glu Asp Phe Ile Asn Thr Leu Asn Ser Ile Gln Trp Leu Glu Val Asn
 195 200 205
 Asn Ser Ile Val Ile Ile Gly Asn Gln Gly Asn Val Asp Arg Val Ile
 210 215 220
 Gly Leu Leu Asn Gly Leu Asp Leu Pro Pro Lys Gln Val Tyr Ile Glu
 225 230 235 240
 Val Leu Ile Leu Asp Thr Ser Leu Glu Lys Ser Trp Asp Phe Gly Val
 245 250 255
 Gln Trp Val Ala Leu Gly Asp Glu Gln Ser Lys Val Ala Tyr Ala Ser
 260 265 270
 Gly Leu Leu Asn Asn Thr Gly Ile Ala Thr Pro Thr Lys Ala Thr Val
 275 280 285
 Pro Pro Gly Thr Pro Asn Pro Gly Ser Ile Pro Leu Pro Thr Pro Gly
 290 295 300
 Gln Leu Thr Gly Phe Ser Asp Met Leu Asn Ser Ser Ser Ala Phe Gly
 305 310 315 320
 Leu Gly Ile Ile Gly Asn Val Leu Ser His Lys Gly Lys Ser Phe Leu
 325 330 335
 Thr Leu Gly Gly Leu Leu Ser Ala Leu Asp Gln Asp Gly Asp Thr Val
 340 345 350
 Ile Val Leu Asn Pro Arg Ile Met Ala Gln Asp Thr Gln Gln Ala Ser
 355 360 365
 Phe Phe Val Gly Gln Thr Val Pro Tyr Gln Thr Thr Asn Thr Ile Ile
 370 375 380
 Gln Glu Thr Gly Thr Val Thr Gln Asn Ile Asp Tyr Glu Asp Ile Gly
 385 390 395 400
 Val Asn Leu Val Val Thr Ser Thr Val Ala Pro Asn Asn Val Val Thr
 405 410 415
 Leu Gln Ile Glu Gln Thr Ile Ser Glu Leu His Ser Ala Ser Gly Ser
 420 425 430
 Leu Thr Pro Val Thr Asp Lys Thr Tyr Ala Ala Thr Arg Leu Gln Ile
 435 440 445
 Pro Asp Gly Cys Phe Leu Val Met Ser Gly His Ile Arg Asp Lys Thr
 450 455 460
 Thr Lys Val Val Ser Gly Val Pro Leu Leu Asn Ser Ile Pro Leu Ile
 465 470 475 480
 Arg Gly Leu Phe Ser Arg Thr Ile Asp Gln Arg Gln Lys Arg Asn Ile
 485 490 495
 Met Met Phe Ile Lys Pro Lys Val Ile Ser Ser Phe Glu Glu Gly Thr
 500 505 510
 Arg Val Thr Asn Lys Glu Gly Tyr Arg Tyr Asn Trp Glu Ala Asp Glu
 515 520 525
 Gly Ser Met Gln Val Ala Pro Arg His Ala Pro Glu Cys Gln Gly Pro
 530 535 540
 Pro Ser Leu Gln Ala Glu Ser Asp Phe Lys Ile Ile Glu Ile Glu Ala
 545 550 555 560
 Gln

<210>745

<211>381

<212>PRT

<213>Chlamydia pneumoniae

<400>745

Leu Lys Lys Asn Pro Val Lys Thr Val Ile Leu Asn Ile Gly Arg Lys
 1 5 10 15
 Ile Leu Gln Gly Ile Lys Lys Xaa Lys Lys Ile Gly Ile Xaa Ser
 20 25 30
 Gly Leu Phe Phe Leu Asp Leu Val Leu Leu Gly Val Ser Xaa Gln Arg

35 40 45
 Pro Thr Glu Thr Ser Ala Asn Val Lys His Asn Leu Arg Asp Glu Lys
 50 55 60
 Leu Ala Ala Cys Pro Lys Asn Ser Ala Ala Ser Leu Ser Ala Lys Lys
 65 70 75 80
 Ser His Thr Lys Lys Thr Thr Pro Gly Ser Ile Pro Ser Lys Val Phe
 85 90 95
 Ser Lys Phe Asp Ala Thr Gln Asp Lys Thr Phe Gln Lys Thr Ser Gly
 100 105 110
 Ser Ala Phe Pro Ala Lys Pro Thr Thr Leu Lys Glu Leu Glu Glu Arg
 115 120 125
 Lys Lys Pro Arg Pro Glu Arg Arg Thr Thr Ala Asp Val Lys Arg Ser
 130 135 140
 Pro Arg Phe Leu Pro Thr Gln Glu Val Glu Glu Pro Val Pro Ala Ala
 145 150 155 160
 Ser Lys Glu Gln Leu Asp Ser Ile Gln Val Trp Glu Glu Lys Gln Asn
 165 170 175
 Tyr Ala Arg Arg Ala Val Asn Ala Ile Asn Leu Ser Ile Lys Lys Gln
 180 185 190
 Leu Glu Glu Gln Thr Ser Thr Val Thr Glu Lys Asp Val Gln Pro Lys
 195 200 205
 Thr Gln Ala Thr Pro His Ala Ser Lys Lys Asn Val Ala Ser Pro Ser
 210 215 220
 Thr Ser Met Pro Gly Ile Glu Lys Ala Ala Thr Thr Val Ala Val Pro
 225 230 235 240
 Gln Asp Lys Ser Glu Glu Lys Val Lys Glu Arg Leu Thr Lys Arg
 245 250 255
 Glu Leu Thr Cys Glu Asp Leu Lys Asp Asn Gly Tyr Thr Val Asn Phe
 260 265 270
 Glu Asp Ile Ser Ile Leu Glu Leu Leu Gln Phe Val Ser Lys Ile Ser
 275 280 285
 Gly Thr Asn Phe Val Phe Asp Ser Asn Asp Leu Gln Phe Asn Val Thr
 290 295 300
 Ile Val Ser His Asp Pro Thr Ser Val Asp Asp Leu Ser Thr Ile Leu
 305 310 315 320
 Leu Gln Val Leu Lys Met His Asp Leu Lys Val Val Glu Gln Gly Asn
 325 330 335
 Asn Val Leu Ile Tyr Arg Asn Pro His Leu Ser Lys Leu Ser Thr Val
 340 345 350
 Val Thr Asp Ser Ser Leu Lys Glu Thr Cys Glu Ala Val Val Val Thr
 355 360 365
 Arg Val Phe Arg Leu Tyr Ser Val Ser Pro Leu Gln Gln
 370 375 380
 <210>746
 <211>94
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>746
 Phe Cys Phe Ser Ser Gln Thr Cys Ile Leu Ser Asn Cys Ser Leu Glu
 1 5 10 15
 Ala Ala Gly Thr Gly Ser Ser Thr Ser Cys Val Gly Lys Lys Arg Gly
 20 25 30
 Asp Leu Phe Thr Ser Ala Val Val Leu Arg Ser Gly Arg Gly Phe Phe
 35 40 45
 Leu Ser Ser Ser Phe Arg Val Val Gly Phe Ala Gly Asn Ala Asp
 50 55 60
 Pro Glu Val Phe Trp Lys Val Leu Ser Trp Val Ala Ser Asn Leu Glu
 65 70 75 80
 Lys Thr Leu Leu Gly Ile Glu Pro Gly Val Val Phe Leu Val
 85 90
 <210>747
 <211>502
 <212>PRT
 <213>Chlamydia pneumoniae

<400>747

```

Met Asp Cys Arg Gly Gly Ile Pro Leu Pro Glu Pro Gln Val Ile Gly
 1          5          10          15
Gly Tyr His Val Lys Lys Ile Leu Ser Lys Lys Leu Arg Ser Arg Val
          20          25          30
Val His Gly Leu His Pro Glu Thr Arg His Ser Thr Val Ile Lys Val
          35          40          45
Phe Ser Pro Ser Pro Ser Phe Thr Ser Arg Ser Val Tyr Asn Phe Leu
 50          55          60
Lys Glu Ala Gln Ser Leu His Gln Ile Thr His Pro Asn Ile Val Lys
 65          70          75          80
Phe His Arg Tyr Gly Lys Trp Gln Asp Cys Leu Tyr Ile Ala Met Glu
          85          90          95
Tyr Ile Glu Gly Ile Ser Leu Arg Glu Tyr Ile Leu Ala Gln Phe Ile
          100          105          110
Ser Leu Pro Gln Ala Ile Asp Ile Ile Phe Asp Ile Ala Gln Ala Leu
          115          120          125
Glu His Leu His Ser Arg Asn Ile Leu His Lys Asp Ile Lys Pro Glu
 130          135          140
Asn Ile Leu Ile Thr Pro Gln Gly Lys Ile Lys Leu Ile Asp Phe Gly
 145          150          155          160
Leu Ala Asp Trp Asp Thr Glu Ile Gln Arg Ala His Pro Ser Val Ile
          165          170          175
Gly Thr Pro Tyr Tyr Met Ser Pro Glu Gln Arg Gln Gly Glu Ser His
          180          185          190
Ser Pro Ala Ser Asp Ile Tyr Ala Leu Gly Leu Leu Ala Tyr Glu Leu
          195          200          205
Ile Leu Gly His Leu Ser Leu Gly Arg Val Phe Leu Ser Leu Val Pro
 210          215          220
Glu Arg Ile Ser Lys Ile Leu Ala Lys Ala Leu Gln Pro Ser Pro Asn
 225          230          235          240
Asn Arg Tyr Ser Ser Thr Arg Glu Phe Ile Gln Asp Ile His His Tyr
          245          250          255
Arg Met Ser Gly Asp Met Gln Glu Asp Leu Arg Ile Lys Asp His Thr
          260          265          270
Val Ala Leu Tyr Glu Gln Leu Gln Thr Gln Arg Phe Trp Leu Ala Pro
          275          280          285
Glu Thr Leu Arg Phe Pro Asp Phe Ile Ser Gly Val Leu Tyr His Gln
 290          295          300
Gly Tyr Pro Leu Tyr Pro His Ala Tyr Asp Thr Leu Leu Glu Gly Asp
 305          310          315          320
Val Phe Asn Leu Trp Leu Gly Tyr Ser Pro Ile Ser Asn Ala Thr Ile
          325          330          335
Ala Leu Ser Val Val Lys Ser Leu Val Cys Gln Gln Asp Leu Gln Arg
          340          345          350
Pro Leu Leu Asp Arg Val Cys Glu Ile Asn Glu Cys Leu Ile Arg Met
          355          360          365
Lys Ile Pro Ile Asp Glu Met Gly Ile Ser Ile Leu Cys Leu Glu Ile
 370          375          380
Ser Lys Glu Asn Lys Glu Leu Ser Trp Ile Ala Cys Gly Lys Thr Val
 385          390          395          400
Phe Trp Ile Lys Arg Gln Gly Arg Val Val Gln Asp Phe Glu Ser Phe
          405          410          415
Ser Pro Gly Leu Gly Lys Ile Thr Ser Leu Gln Ile Arg Glu Thr Lys
          420          425          430
Val Ala Trp Glu Ile Gly Asp Glu Ala Val Val Cys Thr Leu Glu Leu
          435          440          445
Glu Glu Ser Val Ala Ser Leu Lys Thr Leu Ser Leu Ala Glu Leu Gln
          450          455          460
Asp Arg Arg Gln Lys Ala Ile Phe Cys Pro Ile Glu Ser Ile His Gly
 465          470          475          480
Gly Ile Gln Ser Arg Gln His Gly Ser Asn Ser Pro Ser Thr Leu Ile
          485          490          495
Ser Leu Lys Arg Ile Arg

```

500

<210>748

<211>374

<212>PRT

<213>Chlamydia pneumoniae

<400>748

Arg Tyr Phe Met Ala Val Ala Ala Asp Ser Ser Ala Ser Trp Leu Lys
 1 5 10 15
 Ser Arg Asn Asn Phe Leu Ser Ser Leu Gly Lys Thr Glu Glu Gln Val
 20 25 30
 Ala Ala Pro Glu Phe Pro Lys Glu Leu Cys Gln His Lys Ile Arg Glu
 35 40 45
 Lys Phe Arg Leu Glu Asp Val Gln Val Ser Ile Lys Phe Arg Gly Ser
 50 55 60
 Ile Thr Ala Val Glu Ala Thr Lys Glu Phe Gly Val His Leu Leu Ile
 65 70 75 80
 Gln Pro Met Val Val Gln Pro Trp Glu Val Glu Asn Leu Leu Phe Leu
 85 90 95
 Thr Ser Glu Glu Asp Leu Gln Glu Leu Met Val Ala Val Phe Asp Asp
 100 105 110
 Ala Ser Leu Ala Ser Tyr Phe Tyr Glu Lys Asp Lys Leu Glu Gly Phe
 115 120 125
 His Tyr Tyr Phe Val Ala Glu Ala Cys Lys Leu Phe Glu Glu Leu Gln
 130 135 140
 Trp Val Pro Ser Leu Ser Ala Lys Val Gly Gly Asp Ala Ile Phe Thr
 145 150 155 160
 Ala Thr Ser Leu Gln Gly Ser Phe Gln Val Val Asp Ile Ser Leu Arg
 165 170 175
 Leu Asp Gly Lys Asn Val Arg Cys Arg Leu Leu Leu Pro Glu Asp Thr
 180 185 190
 Phe Gln Ser Cys Gln Lys Phe Phe Ser Gly Leu His Asp Glu Ser Asp
 195 200 205
 Leu His Asn Ile Asp Gln Thr Gln Gln Ile Ser Leu Ser Val Glu Val
 210 215 220
 Gly Tyr Ser Gln Leu Thr Gln Glu Glu Trp His Gln Val Val Pro Gly
 225 230 235 240
 Ser Phe Ile Met Leu Asp Ser Cys Leu Tyr Asp Pro Glu Thr Glu Glu
 245 250 255
 Ser Gly Ala Leu Leu Thr Val Gln Lys His Gln Phe Phe Gly Gly Arg
 260 265 270
 Phe Leu Thr Pro Ser Ser Gly Glu Phe Lys Ile Thr Ser Tyr Pro Asn
 275 280 285
 Leu Thr His Glu Asp Pro Pro Leu Pro Glu Asn Pro Gln Ala Ser Ala
 290 295 300
 Ala Pro Leu Pro Gly Tyr Ser Arg Leu Val Val Glu Val Ala Arg Tyr
 305 310 315 320
 Ser Leu Ala Val Ser Glu Phe Ile Lys Leu Asn Leu Gly Ser Ile Leu
 325 330 335
 Ser Leu Gly Asn His Pro Ala Tyr Gly Val Asp Ile Ile Leu Asp Gly
 340 345 350
 Ala Lys Val Gly Arg Gly Glu Ile Ile Ala Leu Gly Asp Val Leu Gly
 355 360 365
 Ile Arg Val Leu Glu Val
 370

<210>749

<211>281

<212>PRT

<213>Chlamydia pneumoniae

<400>749

Phe Met Glu Leu Lys Lys Thr Ala Glu Ser Leu Tyr Ser Ala Lys Thr
 1 5 10 15
 Asp Asn His Thr Val Tyr Gln Asn Ser Pro Glu Pro Arg Asp Ser Arg
 20 25 30
 Asp Val Lys Val Phe Ser Leu Glu Gly Lys Gln Thr Arg Gln Glu Lys

35 40 45
 Thr Thr Ser Ser Lys Gly Asn Thr Arg Thr Glu Ser Arg Lys Phe Ala
 50 55 60
 Asp Glu Glu Lys Arg Val Asp Asp Glu Ile Ala Glu Val Gly Ser Lys
 65 70 75 80
 Glu Glu Glu Gln Glu Ser Gln Glu Phe Cys Leu Ala Glu Asn Ala Phe
 85 90 95
 Ala Gly Met Ser Leu Ile Asp Ile Ala Ala Gly Ser Ala Glu Ala
 100 105 110
 Val Val Glu Val Ala Pro Ile Ala Val Ser Ser Ile Asp Thr Gln Trp
 115 120 125
 Ile Glu Asn Ile Ile Leu Ser Thr Val Glu Ser Met Val Ile Ser Glu
 130 135 140
 Ile Asn Gly Glu Gln Leu Val Glu Leu Val Leu Asp Ala Ser Ser Ser
 145 150 155 160
 Val Pro Glu Ala Phe Val Gly Ala Asn Leu Thr Leu Val Gln Ser Gly
 165 170 175
 Gln Asp Leu Ser Val Lys Phe Ser Ser Phe Val Asp Ala Thr Gln Met
 180 185 190
 Ala Glu Ala Ala Asp Leu Val Thr Asn Asn Pro Ser Gln Leu Ser Ser
 195 200 205
 Leu Val Ser Ala Leu Lys Gly His Gln Leu Thr Leu Lys Glu Phe Ser
 210 215 220
 Val Gly Asn Leu Leu Val Gln Leu Pro Lys Ile Glu Glu Val Gln Thr
 225 230 235 240
 Pro Leu His Met Ile Ala Ser Thr Ile Arg His Arg Glu Glu Lys Asp
 245 250 255
 Gln Arg Asp Gln Asn Gln Lys Gln Lys Asp Asp Lys Glu Gln Asp
 260 265 270
 Ser Tyr Lys Ile Glu Glu Ala Arg Leu
 275 280

<210>750

<211>174

<212>PRT

<213>Chlamydia pneumoniae

<400>750

Tyr Ala Val Ala Lys Tyr Pro Leu Glu Pro Val Leu Ala Ile Lys Lys
 1 5 10 15
 Asp Arg Val Asp Arg Ala Glu Lys Val Val Lys Glu Lys Arg Arg Leu
 20 25 30
 Leu Glu Ile Glu Gln Glu Lys Leu Arg Glu Lys Glu Ala Glu Arg Asp
 35 40 45
 Lys Val Lys Asn His Tyr Met Gln Lys Ile Gln Gln Leu Arg Asp Leu
 50 55 60
 Leu Asp Glu Gly Thr Thr Ser Asp Ala Val Leu Gln Ile Lys Ser Tyr
 65 70 75 80
 Ile Lys Val Val Ala Val Gln Leu Ser Glu Glu Glu Lys Val Asn
 85 90 95
 Lys Gln Lys Glu Val Val Leu Ala Ala Ser Lys Glu Leu Glu Lys Ala
 100 105 110
 Glu Val Asn Leu Ala Lys Arg Arg Lys Glu Glu Glu Lys Thr Arg Leu
 115 120 125
 His Lys Glu Glu Trp Met Lys Glu Ala Leu Lys Glu Glu Val Ala Leu
 130 135 140
 Lys Lys Lys Asn Lys Thr Arg Trp Gly Ser Cys Phe Ser Asn Cys Ala
 145 150 155 160
 Arg Lys Lys Asn Val Asn Gln Gly Glu Ala Ser Ser Trp Asn
 165 170

<210>751

<211>442

<212>PRT

<213>Chlamydia pneumoniae

<400>751

Met Asp Gln Leu Thr Thr Asp Phe Asp Thr Leu Met Ser Gln Leu Gly

1 5 10 15
 Asp Val Asn Leu Thr Thr Val Val Gly Arg Ile Thr Glu Val Val Gly
 20 25 30
 Met Leu Ile Lys Ala Val Val Pro Asn Val Arg Val Gly Glu Val Cys
 35 40 45
 Leu Val Lys Arg Asn Gly Met Glu Pro Leu Val Thr Glu Val Val Gly
 50 55 60
 Phe Thr Gln Ser Phe Ala Phe Leu Ser Pro Leu Gly Glu Leu Ser Gly
 65 70 75 80
 Val Ser Pro Ser Ser Glu Val Ile Pro Thr Gly Leu Pro Leu His Ile
 85 90 95
 Arg Ala Gly Asn Gly Leu Leu Gly Arg Val Leu Asn Gly Leu Gly Glu
 100 105 110
 Pro Ile Asp Val Glu Thr Lys Gly Pro Leu Gln Asn Val Asp Gln Thr
 115 120 125
 Phe Pro Ile Phe Arg Ala Pro Asp Pro Leu His Arg Ala Lys Leu
 130 135 140
 Arg Gln Ile Leu Ser Thr Gly Val Arg Cys Ile Asp Gly Met Leu Thr
 145 150 155 160
 Val Ala Arg Gly Gln Arg Ile Gly Ile Phe Ala Gly Ala Gly Val Gly
 165 170 175
 Lys Ser Ser Leu Leu Gly Met Ile Ala Arg Asn Ala Glu Glu Ala Asp
 180 185 190
 Val Asn Val Ile Ala Leu Ile Gly Glu Arg Gly Arg Glu Val Arg Glu
 195 200 205
 Phe Ile Glu Gly Asp Leu Gly Glu Gly Met Lys Arg Ser Val Ile
 210 215 220
 Val Val Ser Thr Ser Asp Gln Ser Ser Gln Leu Arg Leu Asn Ala Ala
 225 230 235 240
 Tyr Val Gly Thr Ala Ile Ala Glu Tyr Phe Arg Asp Gln Gly Lys Thr
 245 250 255
 Val Val Leu Met Met Asp Ser Val Thr Arg Phe Ala Arg Ala Leu Arg
 260 265 270
 Glu Val Gly Leu Ala Ala Gly Glu Pro Pro Ala Arg Ala Gly Tyr Thr
 275 280 285
 Pro Ser Val Phe Ser Thr Leu Pro Arg Leu Leu Glu Arg Ser Gly Ala
 290 295 300
 Ser Asp Lys Gly Thr Ile Thr Ala Phe Tyr Thr Val Leu Val Ala Gly
 305 310 315 320
 Asp Asp Met Asn Glu Pro Val Ala Asp Glu Val Lys Ser Ile Leu Asp
 325 330 335
 Gly His Ile Val Leu Ser Asn Ala Leu Ala Gln Ala Tyr His Tyr Pro
 340 345 350
 Ala Ile Asp Val Leu Ala Ser Ile Ser Arg Leu Leu Thr Ala Ile Val
 355 360 365
 Pro Glu Glu Gln Arg Arg Ile Ile Gly Lys Ala Arg Glu Val Leu Ala
 370 375 380
 Lys Tyr Lys Ala Asn Glu Met Leu Ile Arg Ile Gly Glu Tyr Arg Arg
 385 390 395 400
 Gly Ser Asp Arg Glu Ile Asp Phe Ala Ile Asp His Ile Asp Lys Leu
 405 410 415
 Asn Arg Phe Leu Lys Gln Asp Ile His Glu Lys Thr Asn Tyr Glu Glu
 420 425 430
 Ala Ala Gln Gln Leu Arg Ala Ile Phe Arg
 435 440
 <210>752
 <211>235
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>752
 Ala Phe Lys Thr Val Lys Arg Phe Phe Cys Phe Met Ile Asp Pro Val
 1 5 10 15
 Glu Cys Phe Pro Asn Leu Asp Gly Asp Ala Glu Ala Gln Ser Ile Thr
 20 25 30

Gln Asn Ser Gly Thr Pro Leu Ala Ser Glu Leu Lys Lys Asp Ile Ser
 35 40 45
 Pro Phe Ala Leu Gly Ser Tyr Ala Ala Pro Lys Asp Thr Thr Leu Val
 50 55 60
 Gln Gly Phe Lys Pro Asn Pro Met Ala Met Met Gln Asp Gln Asn Ser
 65 70 75 80
 Asn Leu Ile Asp Pro Glu Leu Gln Glu Ala Leu Glu Ser Glu Glu Leu
 85 90 95
 Gln Glu Gln Ile Asn Asn Leu Lys Gly Arg Leu Trp Asp Phe Arg Ser
 100 105 110
 Thr Phe Glu Asp Ser Gln Thr Thr Ala Gln Phe Ala Asp Glu His Phe
 115 120 125
 Gln Ala Val Gly Val Ile Ile Asp Leu Ile Asn Glu Asp Leu Asn Thr
 130 135 140
 Ile Ala Glu His Thr Gln Gln Asp Ala Arg Lys Glu Asp Lys Glu Glu
 145 150 155 160
 Gly Ser Val Thr Arg Lys Ile Ile Asp Trp Val Ser Ser Gly Glu Glu
 165 170 175
 Val Leu Asn Arg Ala Leu Leu Tyr Phe Ser Asp Arg Asp Gly Asn Arg
 180 185 190
 Glu Ser Leu Ala Asn Phe Leu Lys Val Gln Tyr Ala Val Gln Arg Ala
 195 200 205
 Thr Gln Arg Ala Glu Leu Phe Ala Ser Ile Val Gly Thr Ser Val Ser
 210 215 220
 Ser Val Lys Thr Ile Met Thr Thr Gln Leu Gly
 225 230 235

<210>753

<211>91

<212>PRT

<213>Chlamydia pneumoniae

<400>753

Arg Ser Arg Gly Glu Lys Ser Met Ala Thr Asn Lys Ser Cys Thr Ala
 1 5 10 15
 Phe Asp Phe Asn Lys Met Leu Asp Gly Val Cys Thr Tyr Val Lys Gly
 20 25 30
 Val Gln Gln Tyr Leu Thr Glu Leu Glu Thr Ser Thr Gln Gly Thr Val
 35 40 45
 Asp Leu Gly Thr Met Phe Asn Leu Gln Phe Arg Met Gln Ile Leu Ser
 50 55 60
 Gln Tyr Met Glu Ser Val Ser Asn Ile Leu Thr Ala Val Asn Thr Glu
 65 70 75 80
 Met Ile Thr Met Ala Arg Ala Val Lys Gly Ser
 85 90

<210>754

<211>102

<212>PRT

<213>Chlamydia pneumoniae

<400>754

Thr Thr Ile Asn Asn Gln Val Leu Gly Phe Ile Asn Tyr Leu Tyr Leu
 1 5 10 15
 Gly Arg Tyr Ser Met Phe Asn Met Glu Asn Thr Ala Lys Glu Glu Lys
 20 25 30
 Asn Ser Gln Pro Leu Leu Asp Leu Glu Gln Asp Met Gln Asp His Asp
 35 40 45
 Arg Ala Gln Glu Leu Lys Ala Ser Val Gln Asp Lys Val His Lys Leu
 50 55 60
 His Ala Leu Leu Arg Glu Gly Ser Asp Lys Glu Ser Phe Gly Gln Gln
 65 70 75 80
 Gln Ser Leu Leu Ala Gly Tyr Val Ala Leu Gln Lys Val Leu Gly Arg
 85 90 95
 Ile Asn Arg Lys Met Ile
 100

<210>755

<211>440

<212>PRT

<213>Chlamydia pneumoniae

<400>755

```

Pro Glu Leu Ile Phe Gly Ala Glu Phe His Leu Asp Ser Gly Lys Thr
 1           5           10           15
Tyr Ile Leu Gly Thr Asp Pro Thr Thr Cys Asp Ile Val Phe Asn Asp
          20           25           30
Leu Ser Val Ser His Gln His Ala Lys Ile Thr Val Gly Asn Asp Gly
          35           40           45
Gly Ile Leu Ile Glu Asp Leu Asp Ser Lys Asn Gly Val Ile Val Glu
          50           55           60
Gly Arg Lys Ile Asp Lys Thr Ser Thr Leu Ser Ser Asn Gln Val Val
          65           70           75           80
Ala Leu Gly Thr Thr Leu Phe Leu Leu Ile Asp His His Ala Pro Ala
          85           90           95
Asp Thr Ile Val Ala Ser Leu Ser Pro Asp Asp Tyr Ser Leu Phe Gly
          100          105          110
Arg Gln Gln Asp Ala Glu Ala Leu Glu Arg Gln Glu Ala Gln Glu Glu
          115          120          125
Glu Glu Lys Gln Lys Arg Ala Thr Leu Pro Ala Gly Ser Phe Ile Leu
          130          135          140
Thr Leu Phe Val Gly Gly Leu Ala Ile Leu Phe Gly Ile Gly Thr Ala
          145          150          155          160
Ser Leu Phe His Thr Lys Glu Val Val Pro Leu Glu Asn Ile Asp Tyr
          165          170          175
Gln Glu Asp Leu Ala Gln Val Ile Asn Gln Phe Pro Thr Val Arg Tyr
          180          185          190
Thr Phe Asn Lys Thr Asn Ser Gln Leu Phe Leu Ile Gly His Val Lys
          195          200          205
Asn Ser Thr Asp Lys Ser Glu Leu Leu Tyr Lys Val Asp Ala Leu Ser
          210          215          220
Phe Val Lys Ser Val Asp Asp Asn Val Ile Asp Asp Glu Ala Val Trp
          225          230          235          240
Gln Glu Met Asn Ile Leu Leu Ser Lys Arg Pro Glu Phe Lys Gly Ile
          245          250          255
Ser Met His Ser Pro Glu Pro Gly Lys Phe Ile Ile Thr Gly Tyr Val
          260          265          270
Lys Thr Glu Glu Gln Ala Ala Cys Leu Val Asp Tyr Leu Asn Ile His
          275          280          285
Phe Asn Ser Leu Ser Leu Leu Glu Asn Lys Val Val Val Xaa Thr Xaa
          290          295          300
Met Leu Lys Ala Ile Ala Gly His Leu Leu Gln Gly Gly Phe Ala Asn
          305          310          315          320
Ile His Val Ala Phe Val Asn Gly Glu Val Ile Leu Thr Gly Tyr Val
          325          330          335
Asn Asn Asp Asp Ala Glu Lys Phe Arg Ala Val Val Gln Glu Leu Ser
          340          345          350
Gly Ile Pro Gly Val Arg Leu Val Lys Asn Phe Ala Val Leu Leu Pro
          355          360          365
Ala Glu Glu Gly Ile Ile Asp Leu Asn Leu Arg Tyr Pro Asn Arg Tyr
          370          375          380
Arg Val Thr Gly Tyr Ser Arg Tyr Gly Glu Ile Ser Ile Asn Val Val
          385          390          395          400
Val Asn Gly-Arg Ile Leu Thr Arg Gly Asp Val Ile Asp Gly Met Thr
          405          410          415
Val Thr Ser Ile Gln Pro Asn Ala Ile Phe Leu Glu Lys Xaa Gly Leu
          420          425          430
Lys Tyr Lys Ile Asp Tyr Asn Lys
          435          440

```

<210>756

<211>202

<212>PRT

<213>Chlamydia pneumoniae

<400>756

Arg Thr Ser Pro Arg Gln Asp Pro Gln Pro Lys Ser Ala Glu Pro Ser
 1 5 10 15
 Leu Lys Asn Thr Ala Arg Asp Glu Thr Pro Leu Lys Glu Asn Lys Pro
 20 25 30
 Val Glu Glu Lys Ala Asn Lys Lys Ala Thr Pro Asp Ser Pro Glu Lys
 35 40 45
 Lys Asp Gln Pro Glu Glu Gly Ser Lys Lys Glu Gly Ser Lys Ile Glu
 50 55 60
 Ala Thr Pro Leu Asp Ser Gln Lys Glu Ser Glu Asp Lys Glu Ala Glu
 65 70 75 80
 Glu Ala Phe Val Gln Glu Glu Glu Asn Leu Thr Glu Asp Asn Lys
 85 90 95
 Glu Asp Ser Asp Ser Ala Ala Asp Ala Asn Asp Asp Thr Ala Ser Asp
 100 105 110
 His Thr Ala Glu Asp Asn Lys Glu Thr Pro Lys Lys Val Glu Asn Glu
 115 120 125
 Lys Ser Ala Val Leu Ser Pro Phe His Val Gln Asp Leu Phe Arg Phe
 130 135 140
 Asp Gln Thr Ile Phe Pro Ala Glu Ile Asp Asp Ile Ala Lys Lys Asn
 145 150 155 160
 Ile Ser Val Asp Leu Thr Gln Pro Ser Arg Phe Leu Leu Lys Val Leu
 165 170 175
 Ala Gly Ala Asn Ile Trp Ser Arg Val Pro Phe Arg Leu Arg Lys Asn
 180 185 190
 Leu Tyr Phe Arg Tyr Gly Ser Tyr Asn Leu
 195 200

<210>757

<211>255

<212>PRT

<213>Chlamydia pneumoniae

<400>757

Met Ala Val Arg Leu Ile Val Asp Glu Gly Pro Leu Ser Gly Val Ile
 1 5 10 15
 Phe Val Leu Glu Asp Gly Ile Ser Trp Ser Ile Gly Arg Asp Ser Ser
 20 25 30
 Ala Asn Asp Ile Pro Ile Glu Asp Pro Lys Leu Gly Ala Ser Gln Ala
 35 40 45
 Ile Ile Asn Lys Thr Asp Gly Ser Tyr Tyr Ile Thr Asn Leu Asp Asp
 50 55 60
 Thr Ile Pro Ile Val Val Asn Gly Val Ala Ile Gln Glu Thr Thr Gln
 65 70 75 80
 Leu Lys Asn Glu Asp Thr Ile Leu Leu Gly Ser Asn Gln Tyr Ser Phe
 85 90 95
 Leu Ser Asp Glu Phe Asp Pro Gln Asp Leu Val Tyr Asp Phe Asp Ile
 100 105 110
 Pro Glu Glu Asn Phe Ser Asn Asp Ser Gly Asp Leu Ser Asp Ser Asn
 115 120 125
 Glu Gln Gly Lys Asp Leu Glu Pro Arg Gln Thr Ser Glu Thr Asn His
 130 135 140
 Ser Pro Lys Pro Lys Glu Lys Leu Thr Lys Asp Gln Gly Ser Ser Asp
 145 150 155 160
 Pro Ile Thr Ser Gly Asp Gln Glu Leu Ala Asp Ala Phe Leu Ala Ser
 165 170 175
 Ala Lys Ala Glu Lys Asn Gln Pro Arg Ala Lys Val Ala Lys Lys Gly
 180 185 190
 Leu Lys Glu Ser Ser Asn Glu Ser Leu Asn Pro Lys Glu Gln Asn Ala
 195 200 205
 Lys Asp Ser Pro Lys Gly Glu Glu Arg Thr Asn Lys Pro Gln Asn Ala
 210 215 220
 Ile Met Glu Asp Asn Gly Leu Arg Leu Gly Lys Ile Arg Asn Gln Ser
 225 230 235 240
 Gln Gln Asn Pro Leu Leu Lys Thr Gln Pro Gly Met Arg Leu Pro
 245 250 255

<210>758

<211>162

<212>PRT

<213>Chlamydia pneumoniae

<400>758

Leu Asp Leu Lys Glu Glu Lys Ala Gly Phe Arg Asn Glu Ile Val Ser
 1 5 10 15
 Ile Pro Gln Gly Thr Lys Thr Thr Ile Ala Ala Leu Glu Asn Thr Ser
 20 25 30
 Met Leu Glu Lys Leu Ile Lys Asn Phe Ala Thr Tyr Met Gly Ile Thr
 35 40 45
 Ser Thr Leu Glu Leu Asp Ala Asp Gly Ala Tyr Val Leu Pro Ile Ser
 50 55 60
 Glu Val Val Lys Val Arg Ala Gln Gln Asn Ala Asp Asn Glu Ile Val
 65 70 75 80
 Leu Ser Ala Ser Leu Gly Ala Leu Pro Pro Ser Ala Asp Thr Ala Lys
 85 90 95
 Leu Tyr Leu Gln Met Met Ile Gly Asn Leu Phe Gly Arg Glu Thr Gly
 100 105 110
 Gly Ser Ala Leu Gly Leu Asp Ser Glu Gly Asn Val Val Met Val Arg
 115 120 125
 Arg Phe Ser Gly Asp Thr Thr Tyr Asp Asp Phe Val Arg His Val Glu
 130 135 140
 Ser Phe Met Asn Phe Ser Glu Thr Trp Leu Ser Asp Leu Gly Leu Gly
 145 150 155 160
 Lys Gln

<210>759

<211>341

<212>PRT

<213>Chlamydia pneumoniae

<400>759

Val Leu Met Val Leu Gly Val Val Gly Ile Ser Tyr Arg Glu Ala Ala
 1 5 10 15
 Leu Lys Glu Arg Glu Arg Ala Ile Gln Tyr Leu Gln Ser Phe Glu Lys
 20 25 30
 Asn Leu Phe Leu Ala Gln Arg Phe Leu Gly Lys Gly Ala Phe Ile
 35 40 45
 Pro Leu Leu Thr Cys His Arg Ala Glu Leu Tyr Tyr Tyr Ser Glu Ser
 50 55 60
 Pro Glu Ile Ala Gln Ala Ala Leu Leu Ser Glu Leu Thr Ser Gln Gly
 65 70 75 80
 Ile Arg Pro Tyr Arg His Arg Gly Leu Ser Cys Phe Thr His Leu Phe
 85 90 95
 Gln Val Thr Ser Gly Ile Asp Ser Leu Ile Phe Gly Glu Thr Glu Ile
 100 105 110
 Gln Gly Gln Val Lys Arg Ala Tyr Leu Lys Gly Ser Lys Glu Arg Glu
 115 120 125
 Leu Pro Phe Asp Leu His Phe Leu Phe Gln Lys Ala Leu Lys Glu Gly
 130 135 140
 Lys Glu Tyr Arg Ser Arg Ile Gly Phe Pro Asp His Gln Val Thr Ile
 145 150 155 160
 Glu Ser Val Val Gln Glu Ile Leu Leu Ser Tyr Asp Lys Ser Ile Tyr
 165 170 175
 Thr Asn Phe Leu Phe Val Gly Tyr Ser Asp Ile Asn Arg Lys Val Ala
 180 185 190
 Ala Tyr Leu Tyr Gln His Gly Tyr His Arg Ile Thr Phe Cys Ser Arg
 195 200 205
 Gln Gln Val Thr Ala Pro Tyr Arg Thr Leu Ser Arg Glu Thr Leu Ser
 210 215 220
 Phe Arg Gln Pro Tyr Asp Val Ile Phe Phe Gly Ser Ser Glu Ser Ala
 225 230 235 240
 Ser Gln Phe Ser Asp Leu Ser Cys Glu Ser Leu Ala Ser Ile Pro Lys
 245 250 255
 Arg Ile Val Phe Asp Phe Asn Val Pro Arg Thr Phe Leu Trp Lys Glu

260 265 270
 Thr Pro Thr Gly Phe Val Tyr Leu Asp Ile Asp Phe Ile Ser Glu Cys
 275 280 285
 Val Gln Lys Arg Leu Gln Cys Thr Lys Glu Gly Val Asn Lys Ala Lys
 290 295 300
 Leu Leu Leu Thr Cys Ala Ala Lys Lys Gln Trp Glu Ile Tyr Glu Lys
 305 310 315 320
 Lys Ser Ser His Ile Thr Gln Arg Gln Ile Ser Ser Pro Arg Ile Pro
 325 330 335
 Ser Val Leu Ser Tyr
 340
 <210>760
 <211>426
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>760
 Met Ala Ala Tyr Thr Glu Ala Ser Ile Leu Ser Leu Ala Ser Leu Asp
 1 5 10 15
 His Ile Arg Leu Arg Ala Gly Met Tyr Ile Gly Arg Leu Gly Asn Gly
 20 25 30
 Ser Gln Lys Glu Asp Gly Ile Tyr Thr Leu Phe Lys Glu Val Val Asp
 35 40 45
 Asn Gly Ile Asp Glu Phe Ile Met Gly His Gly Lys Ser Leu Lys Ile
 50 55 60
 Ser Ala Ser Asp Lys Gln Ile Ser Ile Gln Asp Gln Gly Arg Gly Ile
 65 70 75 80
 Pro Leu Gly Lys Leu Ile Asp Cys Val Ser Lys Ile Asn Thr Gly Ala
 85 90 95
 Lys Tyr Thr Gln Asp Val Phe His Phe Ser Val Gly Leu Asn Gly Val
 100 105 110
 Gly Leu Lys Ala Val Asn Ala Leu Ser Glu Ile Phe Ser Val Arg Ser
 115 120 125
 Val Arg Lys Lys Lys Tyr His Leu Ala Thr Phe His Arg Gly Val Leu
 130 135 140
 Gln Glu Ser Lys Gln Gly Ser Thr Lys Asp Pro Asp Gly Thr Phe Val
 145 150 155 160
 Ser Phe Thr Pro Asp Pro Ser Ile Phe Pro Glu Phe Thr Phe Asn His
 165 170 175
 Asp Phe Leu Lys Asp Lys Ile Arg Gln Tyr Thr Tyr Leu His Ser Gly
 180 185 190
 Leu Glu Ile Arg Phe Asn Asp Glu Val Phe Ile Ser His Asn Gly Leu
 195 200 205
 Lys Asp Leu Phe Asp Ala Glu Ile Thr Glu Pro Pro Leu Tyr Ser Pro
 210 215 220
 Leu Phe Phe Gln Asn Glu Asp Leu Thr Phe Ile Phe Ser His Leu Glu
 225 230 235 240
 Gly Asn Thr Glu Arg Tyr Phe Ser Phe Val Asn Gly Gln Glu Thr Leu
 245 250 255
 Asp Gly Gly Thr His Leu Thr Ala Phe Lys Glu Ala Ile Val Lys Gly
 260 265 270
 Val Asn Glu Phe Phe Gly Lys Thr Phe Val Ser Asn Asp Ile Arg Glu
 275 280 285
 Gly Ile Val Gly Cys Ile Ala Ile Lys Ile Ala Ser Pro Ile Phe Glu
 290 295 300
 Ser Gln Thr Lys Asn Lys Leu Gly Asn Thr Gln Ile Arg Ser Ser Leu
 305 310 315 320
 Ile Lys Asp Val Lys Glu Ala Ile Val Gln Ala Leu Arg Lys Asp Lys
 325 330 335
 Val Ala Pro Glu Leu Leu Leu Glu Lys Ile Lys Phe Asn Glu Lys Thr
 340 345 350
 Arg Lys Asn Ile Gln Phe Ile Lys Gln Asp Leu Lys Ser Lys Gln Lys
 355 360 365
 Lys Val His Tyr Lys Ile Pro Lys Leu Arg Asp Cys Lys Phe His Tyr
 370 375 380

Asn Asp Arg Ser Leu Tyr Gly Glu Ala Ser Ser Ile Phe Leu Thr Glu
 385 390 395 400
 Gly Ser Leu Arg Pro His Gln Phe Leu Leu Gln Glu Ile Pro Ser His
 405 410 415
 Lys Leu Ser Phe His Phe Glu Glu Ser Leu
 420 425

<210>761

<211>125

<212>PRT

<213>Chlamydia pneumoniae

<400>761

Trp Thr Phe Phe Cys Leu Leu Leu Arg Ser Cys Phe Ile Asn Trp Ile
 1 5 10 15
 Phe Phe Arg Val Phe Ser Leu Asn Phe Ile Phe Ser Lys Arg Ser Ser
 20 25 30
 Gly Ala Thr Leu Ser Leu Arg Arg Ala Cys Thr Ile Ala Ser Phe Thr
 35 40 45
 Ser Leu Ile Lys Glu Asp Arg Ile Cys Val Phe Pro Ser Leu Phe Phe
 50 55 60
 Val Cys Asp Ser Lys Ile Gly Glu Ala Ile Phe Ile Ala Met Gln Pro
 65 70 75 80
 Thr Met Pro Ser Arg Met Ser Leu Glu Thr Asn Val Phe Pro Lys Asn
 85 90 95
 Ser Leu Thr Pro Phe Thr Met Ala Ser Leu Lys Ala Val Arg Cys Val
 100 105 110
 Pro Pro Ser Arg Val Ser Cys Pro Leu Thr Lys Glu Lys
 115 120 125

<210>762

<211>210

<212>PRT

<213>Chlamydia pneumoniae

<400>762

Gly Leu Phe Asp Phe Pro Tyr Arg Arg Glu Ser Ala Ser Ala Ser Ile
 1 5 10 15
 Leu Ala Ser Arg Asn Pro Leu Thr Gln Ala Val Phe Ser Leu Arg Gly
 20 25 30
 Lys Pro Met Asn Val Phe Ser Leu Glu Glu Thr Lys Met Tyr Lys Asn
 35 40 45
 Asp Glu Leu Phe Tyr Leu Ala Thr Ala Leu Gly Ile Thr Gln Asn Glu
 50 55 60
 Ile Gln His Leu Arg Tyr Asn Lys Val Ile Leu Ala Thr Asp Ala Asp
 65 70 75 80
 Val Asp Gly Met His Ile Arg Asn Leu Leu Ile Thr Phe Phe Leu Lys
 85 90 95
 Thr Leu Leu Pro Leu Val Glu Asn Asn His Leu Phe Ile Leu Glu Thr
 100 105 110
 Pro Leu Phe Lys Val Arg Asn Lys Thr Thr Thr Leu Tyr Tyr Ser
 115 120 125
 Glu Gln Glu Lys Met Gln Ala Leu Gln Gln Phe Gly Lys Lys Asp Ser
 130 135 140
 Ser Leu Glu Ile Thr Arg Phe Lys Gly Leu Gly Glu Ile Ser Pro Lys
 145 150 155 160
 Glu Phe Ala Ala Phe Ile Gly Pro Glu Ile Arg Leu Thr Pro Val Thr
 165 170 175
 Ile Thr Ser Leu Glu Ser Ile Ser Ser Ile Leu Gln Phe Tyr Met Gly
 180 185 190
 Lys Asn Thr Lys Glu Arg Lys Gln Phe Ile Met Asp Asn Leu Ile Thr
 195 200 205

Asp Phe

210

<210>763

<211>479

<212>PRT

<213>Chlamydia pneumoniae

<400>763

Phe Met Arg Asp Val Ser Glu Leu Phe Arg Thr His Phe Met His Tyr
 1 5 10 15
 Ala Ser Tyr Val Ile Leu Glu Arg Ala Ile Pro His Ile Leu Asp Gly
 20 25 30
 Leu Lys Pro Val Gln Arg Arg Leu Leu Trp Thr Leu Phe Leu Met Asp
 35 40 45
 Asp Gly Lys Met His Lys Val Ala Asn Ile Ala Gly Arg Thr Met Ala
 50 55 60
 Leu His Pro His Gly Asp Ala Pro Ile Val Glu Ala Leu Val Val Leu
 65 70 75 80
 Ala Asn Lys Gly Tyr Leu Ile Asp Thr Gln Gly Asn Phe Gly Asn Pro
 85 90 95
 Leu Thr Gly Asp Pro His Ala Ala Ala Arg Tyr Ile Glu Ala Arg Leu
 100 105 110
 Ser Pro Leu Ala Arg Glu Thr Leu Phe Asn Thr Asp Leu Ile Ala Phe
 115 120 125
 His Asp Ser Tyr Asp Gly Arg Glu Lys Glu Pro Asp Ile Leu Pro Ala
 130 135 140
 Lys Leu Pro Val Leu Leu Leu His Gly Val Asp Gly Ile Ala Val Gly
 145 150 155 160
 Met Thr Thr Lys Ile Phe Pro His Asn Phe Ala Glu Leu Leu Lys Ala
 165 170 175
 Gln Ile Ala Ile Leu Asn Asp Lys Lys Phe Thr Val Phe Pro Asp Phe
 180 185 190
 Pro Ser Gly Gly Leu Met Asp Pro Ser Glu Tyr Gln Asp Gly Leu Gly
 195 200 205
 Ser Ile Thr Leu Arg Ala Ser Ile Asp Ile Ile Asn Asp Lys Thr Leu
 210 215 220
 Val Val Lys Gln Ile Cys Pro Gln Ser Thr Thr Glu Thr Leu Ile Arg
 225 230 235 240
 Ser Ile Glu Asn Ala Ala Lys Arg Gly Thr Ile Lys Ile Asp Thr Ile
 245 250 255
 Gln Asp Phe Ser Thr Asp Val Pro His Ile Glu Ile Lys Leu Pro Lys
 260 265 270
 Gly Ser Arg Ala Lys Glu Met Leu Pro Leu Leu Phe Glu His Thr Glu
 275 280 285
 Cys Gln Val Ile Leu Tyr Ser Lys Pro Thr Val Ile Tyr Glu Asn Lys
 290 295 300
 Pro Val Glu Cys Ser Ile Ser Glu Ile Leu Lys Leu His Thr Thr Ala
 305 310 315 320
 Leu Gln Gly Tyr Leu Glu Lys Glu Leu Leu Leu Gln Glu Gln Leu
 325 330 335
 Thr Leu Asp His Tyr His Lys Thr Leu Glu Tyr Ile Phe Ile Lys His
 340 345 350
 Lys Leu Tyr Asp Ser Val Arg Glu Val Leu Ala Ile Asn Lys Lys Ile
 355 360 365
 Ser Ala Asp Asp Leu His Gln Ala Val Leu His Ala Leu Glu Pro Trp
 370 375 380
 Leu His Glu Leu Ala Thr Pro Val Thr Lys Gln Asp Thr Ser Gln Leu
 385 390 395 400
 Ala Ser Leu Thr Ile Lys Lys Ile Leu Cys Phe Asn Glu Glu Ala Cys
 405 410 415
 Thr Lys Glu Leu Leu Ala Ile Glu Lys Lys Gln Ala Ala Ile Gln Lys
 420 425 430
 Asp Leu Gly Arg Ile Lys Glu Val Thr Val Lys Tyr Leu Lys Gly Leu
 435 440 445
 Leu Glu Arg His Gly His Leu Gly Glu Arg Lys Thr Gln Ile Thr Asn
 450 455 460
 Phe Lys Thr Ala Lys Thr Ser Ile Leu Lys Gln Gln Thr Leu Ile
 465 470 475

<210>764

<211>109

<212>PRT

<213>Chlamydia pneumoniae

<400>764

Arg Ala Val Met Ser Phe Thr Tyr Phe Leu Ala Leu Pro Val Asp Arg
 1 5 10 15
 Leu Met Gln Glu Arg Phe Leu Cys Ser Pro Lys Arg Trp Ala Pro Phe
 20 25 30
 Ile Asn Ser Pro Leu Tyr Leu Thr Leu Ile Ala Asp His Asp Thr Pro
 35 40 45
 Tyr Leu Ala Lys Asn Leu Asp Lys Phe Pro Leu Pro Val Glu Gln Trp
 50 55 60
 Glu Lys Thr Val Leu His Val Ser Ser Leu Leu Lys Ser Ile Phe Leu
 65 70 75 80
 Cys Ser Asp Leu Ser Ser Leu Arg Leu Leu Ala Cys Thr Lys Phe Glu
 85 90 95
 Ile Leu Thr Leu Asn Asp Leu Tyr Cys Ala Gln Asn Ile
 100 105

<210>765

<211>325

<212>PRT

<213>Chlamydia pneumoniae

<400>765

Met Lys Thr Val Thr Ser Phe Thr Val Cys Lys Glu Asn Ser Gly Arg
 1 5 10 15
 Leu Asp Lys Tyr Leu Thr Glu Val His Pro Lys Tyr Ser Arg Ala Phe
 20 25 30
 Tyr Gln Glu His Ile Leu Ser Gly Leu Val Gln Ile Asn Gly Gln Ile
 35 40 45
 Asn Thr Arg Val Ala Thr Arg Leu Asn Cys Gly Asp Ile Val Thr Ile
 50 55 60
 Asp Ile Gln Glu Lys Glu Glu Leu Leu Glu Leu Leu Pro Glu Ala Ile
 65 70 75 80
 Pro Leu Asp Lys Val Tyr Glu Asp Gly Met Ile Leu Val Ile Asn Lys
 85 90 95
 Pro Arg Asp Met Val Val His Pro Ala Pro Gly His Phe His Gly Thr
 100 105 110
 Leu Val His Ala Leu Leu His Glu Ile Gly Glu Arg Leu Lys Glu Glu
 115 120 125
 Phe Pro Glu Glu Pro Trp Arg Pro Gly Ile Val His Arg Leu Asp Lys
 130 135 140
 Asp Thr Ser Gly Leu Ile Ile Thr Ala Lys Thr Arg Gln Ala Lys Lys
 145 150 155 160
 Val Phe Ser Glu Leu Phe Ser Thr Lys Arg Leu Lys Lys Ser Tyr Leu
 165 170 175
 Ala Val Cys Ile Gly Lys Pro Arg Ser Thr Thr Ile His Thr His Ile
 180 185 190
 Ser Arg His Gln Asn Lys Arg Lys Glu Met Thr Val Ser Ser Gln Gly
 195 200 205
 Lys Glu Ala Val Thr His Cys Gln Val Leu Ala Phe Asn Gly Lys Leu
 210 215 220
 Ser Phe Val Ala Leu Ser Pro Glu Thr Gly Arg Thr His Gln Leu Arg
 225 230 235 240
 Val His Met Lys His Leu Gly Thr Pro Ile Leu Gly Asp Pro Val Tyr
 245 250 255
 Gly Ile Pro Ser Met Asn Ser Ser Tyr Gly Leu Asp Lys Gln Gln Leu
 260 265 270
 His Ala Tyr Ser Val Asp Phe Thr His Pro Glu Thr Arg Gln Phe Cys
 275 280 285
 Ser Leu Lys Ala Gly Leu Pro Glu Asp Met Arg Ser Leu Leu Ile Lys
 290 295 300
 Glu Phe Arg Asn Glu Thr Thr Ile Leu Asn Lys Asn Leu Leu Glu Ser
 305 310 315 320
 Ile Leu Lys Glu Gln
 325

<210>766

<211>82

<212>PRT

<213>Chlamydia pneumoniae

<400>766

Leu Arg Ile Thr Met Lys Glu Phe Leu Ala Tyr Ile Ile Lys Asn Leu
 1 5 10 15
 Val Asp Arg Pro Glu Glu Val Arg Ile Lys Glu Val Gln Gly Thr His
 20 25 30
 Thr Ile Ile Tyr Glu Leu Ser Val Ala Lys Pro Asp Ile Gly Lys Ile
 35 40 45
 Ile Gly Lys Glu Gly Arg Thr Ile Lys Ala Ile Arg Thr Leu Leu Val
 50 55 60
 Ser Val Ala Ser Arg Asn Asn Val Arg Val Ser Leu Glu Ile Met Glu
 65 70 75 80
 Glu Lys

<210>767

<211>273

<212>PRT

<213>Chlamydia pneumoniae

<400>767

Lys Arg Met Val Met Phe Asn Asn Lys Met Ile Leu Ile Ala Gly Pro
 1 5 10 15
 Cys Val Ile Glu Gly Glu Asp Ile Thr Leu Glu Ile Ala Gly Lys Leu
 20 25 30
 Gln Ser Ile Leu Ala Pro Tyr Ser Asp Arg Ile Gln Trp Phe Phe Lys
 35 40 45
 Ser Ser Tyr Asp Lys Ala Asn Arg Ser Ser Leu Asn Ser Phe Arg Gly
 50 55 60
 Pro Gly Leu Thr Glu Gly Leu Arg Ile Leu Ala Lys Val Lys Glu Thr
 65 70 75 80
 Phe Gly Val Gly Ile Leu Thr Asp Val His Thr Pro Gln Asp Ala Tyr
 85 90 95
 Ala Ala Ala Glu Val Cys Asn Ile Leu Gln Val Pro Ala Phe Leu Cys
 100 105 110
 Xaa Gln Thr Asp Leu Leu Val Ala Thr Ala Glu Thr Gly Ala Ile Val
 115 120 125
 Asn Leu Lys Lys Gly Gln Phe Leu Ser Pro Trp Asp Met Glu Gly Pro
 130 135 140
 Ile Asn Lys Val Leu Ser Thr Gly Asn Asn Lys Ile Leu Leu Thr Glu
 145 150 155 160
 Arg Gly Cys Ser Phe Gly Tyr Asn Asn Leu Val Ser Asp Met Arg Ser
 165 170 175
 Ile Pro Val Leu Ser Arg Ser Gly Phe Pro Val Ile Phe Asp Ala Thr
 180 185 190
 His Ser Val Gln Leu Pro Gly Ala Leu Ser Thr Glu Ser Gly Gly Leu
 195 200 205
 Thr Glu Phe Val Pro Thr Leu Ser Arg Ala Ala Leu Ala Ala Gly Ala
 210 215 220
 His Gly Leu Phe Ile Glu Thr His Thr Asn Pro Lys Ile Ala Lys Ser
 225 230 235 240
 Asp Ala Ala Ser Met Leu Ser Leu Glu Glu Phe Ala Ala Leu Leu Pro
 245 250 255
 Thr Trp Asp Gln Leu Phe Thr Cys Val Ser Ser Phe Asp Met Val Ser
 260 265 270
 Ala

<210>768

<211>162

<212>PRT

<213>Chlamydia pneumoniae

<400>768

Met Thr Lys Phe Leu Tyr Cys Gly Leu Phe Tyr Ser Leu Gly Leu Leu
 1 5 10 15

Val Leu Ala Phe Gly Thr Met Val Ala Ile Ile Gln Val Asp Gln Ile
 20 25 30
 Cys Asp Val-Ser Cys Met Asn Lys His Phe Gln Glu Ser Pro Pro Phe
 35 40 45
 Leu Lys Ile Lys Lys Val Asn Val Ser Lys Gln Ile Cys Ser Pro Glu
 50 55 60
 Glu Arg Phe Phe His Cys Lys Ile Asp Lys Ser Cys Met Glu Leu His
 65 70 75 80
 Phe Pro Gln Ser Ser Tyr Ser Cys Lys Glu Tyr Leu Thr Arg Ile Ser
 85 90 95
 Gly His Ile Leu Thr Gln Asn Phe Glu Lys Gln Met Gln Phe Arg Gly
 100 105 110
 Asn Ser Gly Leu Leu Asn Tyr Gln Asp Gly Ser Leu His Val Tyr Asp
 115 120 125
 Cys Arg Phe Gln Val Asp Pro Val Pro Gly Tyr Gly Ser Pro Asp Lys
 130 135 140
 Glu Asp Ser Ser Ser Gly Met Lys Thr Leu Tyr Leu Ser Leu Phe
 145 150 155 160
 Arg Asn

<210>769

<211>240

<212>PRT

<213>Chlamydia pneumoniae

<400>769

Met Pro Ile Leu Ser Val Cys Asn Leu Val Lys Lys Tyr Asn Lys Lys
 1 5 10 15
 Pro Val Thr Asn Asp Val Ser Phe Gln Ile Asn Pro Gly Glu Ile Val
 20 25 30
 Gly Leu Leu Gly Pro Asn Gly Ala Gly Lys Thr Thr Ala Phe Tyr Leu
 35 40 45
 Thr Val Gly Leu Ile Arg Pro Asp Ser Gly Lys Ile Ile Phe Lys Asn
 50 55 60
 Val Asp Val Thr Lys Lys Thr Met Asp His Arg Ala Arg Leu Gly Ile
 65 70 75 80
 Gly Tyr Leu Ala Gln Glu Pro Thr Ile Phe Lys Glu Leu Thr Val Gln
 85 90 95
 Asp Asn Leu Ile Cys Ile Leu Glu Ile Ile Tyr Lys Ala Arg Lys Gln
 100 105 110
 Gln Ser His Leu Leu Asn Thr Leu Val Asp Asp Leu Gln Leu Gly Ser
 115 120 125
 Cys Leu His Lys Lys Ala Gly Thr Leu Ser Gly Gly Glu Arg Arg Arg
 130 135 140
 Leu Glu Ile Ala Cys Val Leu Ala Leu Asn Pro Ser Val Leu Leu Leu
 145 150 155 160
 Asp Glu Pro Phe Ala Asn Val Asp Pro Leu Val Ile Gln Asn Val Lys
 165 170 175
 Tyr Leu Ile Lys Ile Leu Ala Gly Arg Gly Ile Gly Ile Leu Ile Thr
 180 185 190
 Asp His Asn Ala Lys Glu Leu Leu Ser Ile Ala Asp Arg Cys Tyr Leu
 195 200 205
 Ile Ile Asp Gly Lys Ile Phe Glu Gly Ser Ser Gln Met Ile
 210 215 220
 Ser Asn Pro Met Val Lys Gln His Tyr Leu Gly Asp Ser Phe Ser Tyr
 225 230 235 240

<210>770

<211>299

<212>PRT

<213>Chlamydia pneumoniae

<400>770

Arg Thr Ser Thr Arg Leu Asp Tyr Arg Ser Gly Cys Ile Leu Ser Lys
 1 5 10 15
 Ile Leu Pro Phe Pro Glu Leu Trp Lys Met Leu Leu Gly Phe Leu Cys
 20 25 30

Asp Cys Pro Cys Ala Ser Trp Gln Cys Ala Ala Val Ala Asn Cys Tyr
 35 40 45
 Asp Ser Val-Phe Met Ser Arg Pro Glu His Lys Pro Asn Ile Pro Tyr
 50 55 60
 Ile Thr Lys Ala Thr Arg Arg Gly Leu Arg Met Lys Thr Leu Ala Tyr
 65 70 75 80
 Leu Ala Ser Leu Lys Asp Ala Arg Gln Leu Ala Tyr Asp Phe Leu Lys
 85 90 95
 Asp Pro Gly Ser Leu Ala Arg Leu Ala Lys Ala Leu Ile Ala Pro Lys
 100 105 110
 Glu Ala Leu Gln Glu Gly Asn Leu Phe Phe Tyr Gly Cys Ser Asn Ile
 115 120 125
 Glu Asp Ile Leu Glu Glu Met Arg Arg Pro His Arg Ile Leu Leu Leu
 130 135 140
 Gly Phe Ser Tyr Cys Gln Lys Pro Lys Ala Cys Pro Glu Gly Arg Phe
 145 150 155 160
 Asn Asp Ala Cys Arg Tyr Asp Pro Ser His Pro Thr Cys Ala Ser Cys
 165 170 175
 Ser Ile Gly Thr Met Met Arg Leu Asn Ala Arg Arg Tyr Thr Thr Val
 180 185 190
 Ile Ile Pro Thr Phe Ile Asp Ile Ala Lys His Leu His Thr Leu Lys
 195 200 205
 Lys Arg Tyr Pro Gly Tyr Gln Ile Leu Phe Ala Val Thr Ala Cys Glu
 210 215 220
 Leu Ser Leu Lys Met Phe Gly Asp Tyr Ala Ser Val Met Asn Leu Lys
 225 230 235 240
 Gly Val Gly Ile Arg Leu Thr Gly Arg Ile Cys Asn Thr Phe Lys Ala
 245 250 255
 Phe Lys Leu Ala Glu Arg Gly Val Lys Pro Gly Val Thr Ile Leu Glu
 260 265 270
 Glu Asp Gly Phe Glu Val Leu Ala Arg Ile Leu Thr Glu Tyr Ser Ser
 275 280 285
 Ala Pro Phe Pro Arg Asp Phe Cys Glu Ile His
 290 295
 <210>771
 <211>438
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>771
 Val Tyr Lys Ser Leu Val Thr Phe Lys Cys Gly Glu His Leu Gly Ala
 1 5 10 15
 Ile Trp Ala Tyr Phe Thr Ala Ser Thr Val Val Ala Leu Asn Pro Thr
 20 25 30
 Ala Thr Met Asp His Val Lys Ala Ala Ile Leu Glu Glu Ala Lys Glu
 35 40 45
 Leu Asp Asn Ser Ser Phe Gln Leu Ala Ser Ser Ile Lys Ser Ala Met
 50 55 60
 Thr Ser Ile Val Asn Ser Ser Gly Ser Phe Ser Val Thr Val Asn Ser
 65 70 75 80
 Ser Thr Leu Gln Tyr Thr Ile Tyr Ser Glu Lys Asn Gly Lys Val Glu
 85 90 95
 Ile Asn Gln Ile Leu Leu Asn Tyr Gly Ser Thr Gly Phe Leu Pro Glu
 100 105 110
 Ile Thr Lys Leu Ala Lys Thr Asn Ala Glu Ser Thr Ala Arg Ser Tyr
 115 120 125
 Phe Arg Phe Lys Ala Leu Ala Ala Val Glu Ser Glu Asn Val Gln Asn
 130 135 140
 Lys Ile Glu Asp Leu Gln Ser Gln Leu Gln Gln Phe Thr Asn Met Lys
 145 150 155 160
 Thr Glu Leu Phe Asp Gly Gln Leu Leu Ser Gln Ala Ser Glu Leu Arg
 165 170 175
 Ala Leu Pro Leu Leu Ser Ala Val Ala Ser Val Leu Ile Asp Arg Tyr
 180 185 190
 Met Pro Lys Glu Val Asp Tyr Leu Asn Glu Ile Tyr Lys Lys Leu Tyr

195 200 205
 Tyr Ser Asn Leu Gly Ser Ser Val Gly Asn Ser Ile Ile Asp Ala Ile
 210 215 220
 Ser Gln Tyr Val Asn Gly Ala Thr Tyr Phe Asn Phe Ala Ser Tyr Val
 225 230 235 240
 Gly Gln Gln Pro Ala Val Gly Ala Gly Gly Ala Asn Ala Phe Pro Gly
 245 250 255
 Ser Gln Glu Ser Ala Gln Ala Lys Leu Asp Gln Glu Arg Lys Gln Ala
 260 265 270
 Ala Leu Tyr Leu Gln Glu Thr Arg Gly Ala Leu Thr Val Ile Glu Glu
 275 280 285
 Gln Arg Ala Arg Val Leu Lys Asp Asp Lys Ile Thr Asn Glu Gln Arg
 290 295 300
 Ser Thr Ile Leu Asp Ser Leu Arg Asn Tyr Glu Asp Asn Ile Asn Ser
 305 310 315 320
 Ile Ser Gly Ser Leu Val Leu Leu Gln Asn Tyr Leu Gln Pro Leu Ser
 325 330 335
 Ile Ala Gly Gly Ser Val Ala Gly Thr Phe Glu Val Lys Glu Gly Gln
 340 345 350
 Glu Gln Trp Gln Ala Arg Leu Gln Ile Leu Glu Glu Ala Leu Val Ser
 355 360 365
 Gly Leu Val Gly Asn Met Ile Asn Gly Gly Met Phe Pro Leu Gln Ser
 370 375 380
 Thr Ile Gln Ser Asp Gln Gln Ser Phe Ala Asp Met Gly Gln Asn Phe
 385 390 395 400
 Gln Leu Asp Leu Gln Met His Leu Thr Ser Met Gln Gln Glu Trp Thr
 405 410 415
 Val Val Ala Thr Ser Leu Gln Leu Leu Asn Gln Met Tyr Leu Ser Leu
 420 425 430
 Ala Arg Ser Leu Thr Gly
 435
 <210>772
 <211>422
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>772
 Ala Asp Ile Asp Met Ile Tyr Ser Thr Ser Ile Ser Thr Phe Tyr Lys
 1 5 10 15
 Lys Leu Ser Leu Val Ser Ser Met His Ser Phe Ala Gln Arg His Arg
 20 25 30
 Glu Ser Leu Glu His Ile Ala Asn Tyr Glu Lys Thr Thr Ala Glu Arg
 35 40 45
 Asp Ile Leu Lys Arg Leu Ile Glu Val Leu Asp Gln Arg Ala Ser Glu
 50 55 60
 Arg Tyr Arg Ser Ala Val Glu Lys Leu His Lys Tyr Glu Val Glu Arg
 65 70 75 80
 Ala Thr Val Ala Lys Ser Ile Pro Val Ala Ala Ile His Glu Lys Pro
 85 90 95
 Leu Ser Ser Thr His Ala Ser Val Gln Val Thr Ala Ser Thr Pro Ala
 100 105 110
 Ala Thr Gly Ser Gly Val Gly Ala Tyr Tyr Asn Ala Val Lys Gln Lys
 115 120 125
 Trp Ala Gln Asp Leu Ile Val Glu Leu Asn Thr Val Met Thr Thr Ile
 130 135 140
 Met Ala Ser Val Asn Ser Lys Asn Pro Ala Asn Lys Asp Val Phe Asp
 145 150 155 160
 Lys Leu Asn Thr Glu Leu Gln Ala Leu Val Ala Ala Gly Asn Asn Leu
 165 170 175
 Thr Glu Glu Asn Phe Gln Thr Leu Tyr Asn Phe Pro Glu Glu Ile Phe
 180 185 190
 Thr Ala Ile Gln Arg Ala Asp Thr Phe Thr Gly Gly Met Lys Thr Asp
 195 200 205
 Phe Thr Asn Gln Leu Ala Gly Lys Tyr Gly Asn Gln Ala Thr Leu Thr
 210 215 220

Ser Ser Tyr Leu Val Gln Ser Lys Thr Gly Gln Asn Leu Phe Ala Gly
 85 90 95
 Asp Tyr Tyr Glu Thr Leu Leu Ala Ala Arg Glu Arg Glu Tyr Ile
 100 105 110
 Tyr Arg Asp Thr Ala Arg Cys Lys Gln Ala Ile Asn Leu Val Asn Gly
 115 120 125
 Leu Leu Gln Lys Ile Asn Ser Leu Pro Gly Ala Thr Ser Ala Gln Lys
 130 135 140
 Gln Glu Met Leu Asn Ala Thr Thr Tyr Tyr Gln Tyr Ser Leu Ser Val
 145 150 155 160
 Thr Leu Asn Gln Leu Thr Val Leu Glu Ser Leu Leu Ala Gly Leu Lys
 165 170 175
 Met Thr Leu Gln Thr Thr Ser Asn Asn Lys Tyr Asp Lys Ser Val Phe
 180 185 190
 Lys Ile Glu Ser Phe Asp Asp Trp Ile Pro Thr Leu Ala Ala Leu Glu
 195 200 205
 Ser Phe Leu Thr Ser Gly Phe Pro Asn Ile Ser Ala Thr Gly Gly Leu
 210 215 220
 Gly Pro Leu Phe Thr Gln Val Gln Ser Asp Gln Gln Thr Tyr Thr Ser
 225 230 235 240
 Gln Gly Gln Thr Gln Gln Leu Asn Leu Gln Asn Gln Met Thr Thr Ile
 245 250 255
 Gln Gln Glu Trp Thr Leu Val Ser Thr Ser Met Gln Val Leu Asn Gly
 260 265 270
 Ile Leu Ser Gln Leu Ala Gly Ala Ile Tyr Ser Asn
 275 280

<210>775

<211>212

<212>PRT

<213>Chlamydia pneumoniae

<400>775

Asp Arg Ser Leu Leu Leu Phe Val Ser Ala Gly Val Pro Pro Ala
 1 5 10 15
 Ala Ala Ser Ser Ile Gly Ser Ser Val Asn Gln Leu Tyr Lys Thr Ser
 20 25 30
 Lys Ser Thr Gly Ser Asp Tyr Lys Thr Gln Ile Ser Ala Gly Tyr Asp
 35 40 45
 Ala Tyr Lys Ser Ile Asn Asp Ala Tyr Gly Arg Ala Arg Asn Asp Ala
 50 55 60
 Thr Arg Asp Val Ile Asn Asn Val Ser Thr Pro Ala Leu Thr Arg Ser
 65 70 75 80
 Val Pro Arg Ala Arg Thr Glu Ala Arg Gly Pro Glu Lys Thr Asp Gln
 85 90 95
 Ala Leu Ala Arg Val Ile Ser Gly Asn Ser Arg Thr Leu Gly Asp Val
 100 105 110
 Tyr Ser Gln Val Ser Ala Leu Gln Ser Val Met Gln Ile Ile Gln Ser
 115 120 125
 Asn Pro Gln Ala Asn Asn Glu Glu Ile Arg Gln Lys Leu Thr Ser Ala
 130 135 140
 Val Thr Lys Pro Pro Gln Phe Gly Tyr Pro Tyr Val Gln Leu Ser Asn
 145 150 155 160
 Asp Ser Thr Gln Lys Phe Ile Ala Lys Leu Glu Ser Leu Phe Ala Glu
 165 170 175
 Gly Ser Arg Thr Ala Ala Glu Ile Lys Ala Leu Ser Phe Glu Thr Asn
 180 185 190
 Ser Leu Phe Ile Gln Gln Val Leu Val Asn Ile Gly Ser Leu Tyr Ser
 195 200 205
 Gly Tyr Leu Gln
 210

<210>776

<211>478

<212>PRT

<213>Chlamydia pneumoniae

<400>776

Val Phe Met Val Asn Pro Ile Gly Pro Gly Pro Ile Asp Glu Thr Glu
 1 5 10 15
 Arg Thr Pro Pro Ala Asp Leu Ser Ala Gln Gly Leu Glu Ala Ser Ala
 20 25 30
 Ala Asn Lys Ser Ala Glu Ala Gln Arg Ile Ala Gly Ala Glu Ala Lys
 35 40 45
 Pro Lys Glu Ser Lys Thr Asp Ser Val Glu Arg Trp Ser Ile Leu Arg
 50 55 60
 Ser Ala Val Asn Ala Leu Met Ser Leu Ala Asp Lys Leu Gly Ile Ala
 65 70 75 80
 Ser Ser Asn Ser Ser Ser Thr Ser Arg Ser Ala Asp Val Asp Ser
 85 90 95
 Thr Thr Ala Thr Ala Pro Thr Pro Pro Pro Pro Thr Phe Asp Asp Tyr
 100 105 110
 Lys Thr Gln Ala Gln Thr Ala Tyr Asp Thr Ile Phe Thr Ser Thr Ser
 115 120 125
 Leu Ala Asp Ile Gln Ala Ala Leu Val Ser Leu Gln Asp Ala Val Thr
 130 135 140
 Asn Ile Lys Asp Thr Ala Ala Thr Asp Glu Glu Thr Ala Ile Ala Ala
 145 150 155 160
 Glu Trp Glu Thr Lys Asn Ala Asp Ala Val Lys Val Gly Ala Gln Ile
 165 170 175
 Thr Glu Leu Ala Lys Tyr Ala Ser Asp Asn Gln Ala Ile Leu Asp Ser
 180 185 190
 Leu Gly Lys Leu Thr Ser Phe Asp Leu Leu Gln Ala Ala Leu Leu Gln
 195 200 205
 Ser Val Ala Asn Asn Asn Lys Ala Ala Glu Leu Leu Lys Glu Met Gln
 210 215 220
 Asp Asn Pro Val Val Pro Gly Lys Thr Pro Ala Ile Ala Gln Ser Leu
 225 230 235 240
 Val Asp Gln Thr Asp Ala Thr Ala Thr Gln Ile Glu Lys Asp Gly Asn
 245 250 255
 Ala Ile Arg Asp Ala Tyr Phe Ala Gly Gln Asn Ala Ser Gly Ala Val
 260 265 270
 Glu Asn Ala Lys Ser Asn Asn Ser Ile Ser Asn Ile Asp Ser Ala Lys
 275 280 285
 Ala Ala Ile Ala Thr Ala Lys Thr Gln Ile Ala Glu Ala Gln Lys Lys
 290 295 300
 Phe Pro Asp Ser Pro Ile Leu Gln Glu Ala Glu Gln Met Val Ile Gln
 305 310 315 320
 Ala Glu Lys Asp Leu Lys Asn Ile Lys Pro Ala Asp Gly Ser Asp Val
 325 330 335
 Pro Asn Pro Gly Thr Thr Val Gly Gly Ser Lys Gln Gln Gly Ser Ser
 340 345 350
 Ile Gly Ser Ile Arg Val Ser Met Leu Leu Asp Asp Ala Glu Asn Glu
 355 360 365
 Thr Ala Ser Ile Leu Met Ser Gly Phe Arg Gln Met Ile His Met Phe
 370 375 380
 Asn Thr Glu Asn Pro Asp Ser Gln Ala Ala Gln Gln Glu Leu Ala Ala
 385 390 395 400
 Gln Ala Arg Ala Ala Lys Ala Ala Gly Asp Asp Ser Ala Ala Ala Ala
 405 410 415
 Leu Ala Asp Ala Gln Lys Ala Leu Glu Ala Ala Leu Gly Lys Ala Gly
 420 425 430
 Gln Gln Gln Gly Ile Leu Asn Ala Leu Gly Gln Ile Ala Ser Ala Ala
 435 440 445
 Val Cys Glu Arg Arg Ser Ser Ser Arg Cys Ser Lys Phe Tyr Arg Val
 450 455 460
 Ile Cys Lys Pro Ala Leu Gln Asp Leu Lys Ile Tyr Arg Phe
 465 470 475

<210>777

<211>438

<212>PRT

<213>Chlamydia pneumoniae

Gln Thr Phe Ala Asp Gly Arg Val Glu Gly Phe Lys Asp Ile Leu Thr
 225 230 235 240
 Ala Val Gln Gly Val Leu Thr Pro Glu Gln Phe Thr Ile Phe Ala Glu
 245 250 255
 Ile Ala Thr Glu Leu Gln Ala Leu Ala Asp His Val Gly Asn Phe Asp
 260 265 270
 Glu Ala Gly Leu Gln Arg Ile Glu Asp Ala Gly Glu Lys Leu Ala Ala
 275 280 285
 Val Ile Asn Ser Ser Asp Leu Thr Arg Asn Asp Lys Ile Met Phe Cys
 290 295 300
 Gln His Ile Thr Asp Leu Tyr Ser Asp Gln Val Ala Ala Leu Gly Ser
 305 310 315 320
 Phe Asp Thr Val Leu Asp Ala Ser Ile Tyr Val Asn Gln His Gln Gly
 325 330 335
 Thr Met Phe Ser Asn Leu Ser Ser Phe Val Gly Ser Leu Ile Gly Thr
 340 345 350
 Phe Ala Pro Ile Asp Leu Ser Ser Ser Gln Gly Asp Ile Ser Ser Ala
 355 360 365
 Ala Leu Ala Gly Ala Leu Gln Thr Ala Arg Gly Leu Asn Ser Arg Phe
 370 375 380
 Asn Glu Leu Thr Ala Glu Gln Gln Lys Leu Ile Asn Glu Cys Ile Asn
 385 390 395 400
 Leu Trp Leu Pro Leu Ser Val Val Ser Thr Leu Val Leu Ser Gly Leu
 405 410 415
 Ile Leu Gln His Leu Leu
 420

<210>773

<211>645

<212>PRT

<213>Chlamydia pneumoniae

<400>773

Lys Tyr Tyr Leu Phe Ser Met Ser Thr Phe Ser Ile Gln Asn Arg Leu
 1 5 10 15
 Arg Thr Ile Ser Gly Glu Ser Thr Arg Ile Ile Lys Leu Asp His Lys
 20 25 30
 Tyr Ser Gly Phe Asp Pro Arg Ser Val Pro Ala Ile Asn Leu Glu Glu
 35 40 45
 Leu Asn Ser Gly Ile Tyr Ala Leu Arg His Leu Met Asn Ala Leu Gln
 50 55 60
 Ser Glu Asn Thr Asn Val Ala Ala Leu Leu Asn Pro Asn Asn Thr Ile
 65 70 75 80
 Phe Pro Thr Thr Ser Trp Thr Asp Tyr Lys His Ser Arg Pro Gln Ala
 85 90 95
 Ser Ser Pro Arg Ala Pro Ser Ser Gln Thr Pro Thr Asp Ile Val Ser
 100 105 110
 Ala Ala Ala Leu Ala Leu Val Leu Val Ile Asp Gly Gly Leu Ala Glu
 115 120 125
 Leu Val Ala Ser Val Thr Glu Ile Asp Leu Gly Ala Leu Ser Thr Ile
 130 135 140
 Ser Thr Val Arg Gln Leu Met Ala Ser Tyr Leu Gly Leu Thr Thr Leu
 145 150 155 160
 Thr Ala Glu Gln Glu Lys Val Val Phe Ser Ser Tyr Val Pro Ser
 165 170 175
 Glu Lys Asn Leu Leu Glu His Val Lys Gln Glu Lys Ala Ala Glu Ile
 180 185 190
 Gln Ala Lys Gln Glu Glu Ile Lys Ala Val Leu Glu Ala Lys Gly Val
 195 200 205
 Ser Thr Glu Glu Ile Glu Ala Ile Leu Lys Glu Tyr Pro Asp Ile Tyr
 210 215 220
 Ala Ala Asp Phe Phe Lys Glu Phe Ile Glu Glu Pro Leu His Thr Tyr
 225 230 235 240
 Arg Ala Lys Val Gly Ala Pro Ile Gln Glu Met Asn Glu Asn Ala Ile
 245 250 255
 Gln Leu Leu Pro Thr Pro Pro Ala Ile Thr Pro Asp Asn Val Asn Glu

260	265	270
Val Asn Gly Met Asn Thr Leu Ser Thr Ile Leu Gln Ala Ile Asp Asp		
275	280	285
Ala Ile Lys Gln Ala Pro Ala Leu Gly Gly Asp Gln Glu Ile Ile Thr		
290	295	300
Ile Leu Gln Thr Leu Val Pro Leu Val Asp Lys Thr Thr Phe Thr Lys		
305	310	315
Ala Glu Phe Asp Leu Ile Tyr Thr Ala Thr Gln Leu Pro Asn Thr Ala		
325	330	335
Ser Leu Lys Leu Tyr Leu Thr Asp Arg Gln Ile Ala Glu Tyr Arg Gly		
340	345	350
Lys Ile Thr Lys Val Tyr Gln Asn Ser Ile Gln Asn Leu Ser Glu Thr		
355	360	365
Lys Arg Val Val Glu Asn Asn Arg Ser Met Leu Glu Thr Gln Leu Ser		
370	375	380
Met Phe Gln Gln Ala Gln Asn Cys Phe Val Thr Trp Ile Ser Gln Ala		
385	390	395
Asn Ala Leu Asn Ile Ala Ile Thr Asn Lys Tyr Ile Ser Ala Val Leu		
405	410	415
Thr Thr Ser Met Glu Met Tyr Gly Gly Leu Leu Cys Leu Ser Tyr Met		
420	425	430
Tyr Glu Arg Leu Ala Asp Asp Glu Lys Ala Ile Phe Asp Lys Ser Val		
435	440	445
Asn Glu Tyr Leu Pro Ile His Ile Val Val Gly Gly Ser Trp Val Asn		
450	455	460
Gly Trp Ile Ala Lys Met Ala Ala Tyr Gln Glu Ala Glu Tyr Ser		
465	470	475
Leu Gly Thr Ala Val Thr Ser Gln Asp Gln Ile Lys Ala Tyr Leu Gln		
485	490	495
Thr Arg Gly Asn Glu Phe Lys Ala Thr Arg His Phe Phe His Asn Ile		
500	505	510
Gly Asp Gln Met Tyr Gln Phe Ala Asn Glu Thr Val Phe Gly Asn Cys		
515	520	525
Leu Thr Thr Ala Asn Gly Ala Ile Gln Pro Asp Leu Gly Gly Phe Ile		
530	535	540
Arg Glu Ala Met Thr Asn Val Gly Thr Val Glu Ala Asp Tyr Val Ser		
545	550	555
Asn Ala Gln Arg Ile Leu Asn Glu Phe Asn Thr Ala Ala Thr Ala His		
565	570	575
Val Leu Gln Leu Gln Leu Gln Ile Ala Glu Leu Gln Lys Lys Ala Asp		
580	585	590
Asp Leu Asp Pro Gly Lys Ala Ser Phe Thr Glu Asn Arg Lys Phe Ala		
595	600	605
Val Ala Ala Leu Asp His Ile Gly Glu Leu Arg Arg Cys Phe Asn Phe		
610	615	620
Tyr Asp Phe Xaa Leu Ser Ala Thr Lys Ala Arg Gly Phe Phe Lys Thr		
625	630	635
Phe Asp Arg Arg Asn		
645		

<210>774

<211>284

<212>PRT

<213>Chlamydia pneumoniae

<400>774

Thr Gln Glu Lys Pro Leu Ser Leu Arg Thr Val Asn Leu Leu Leu Pro		
1	5	10
Leu Trp Ile Thr Ser Glu Ser Leu Gly Asp Ala Leu Ile Ser Met Ile		
20	25	30
Xaa Asn Ser Gln Leu Pro Lys Gln Glu Ala Phe Leu Lys Pro Leu Ile		
35	40	45
Glu Glu Ile Asn Phe Asn Asn Leu Ala Ala Asn Ala Leu Asn Ser Leu		
50	55	60
Leu Gln Ile Thr Asn Glu Phe Ser Thr Thr Ser Val Tyr Tyr Ser Leu		
65	70	75
		80

<400>777

Pro Ala Trp Ser Ser Val Ser Thr Leu Asn Ile Asp Thr Lys Asp Thr
 1 5 10 15
 Met Lys Lys Gln Val Tyr Gln Trp Leu Ala Ser Val Val Leu Leu Ala
 20 25 30
 Leu Thr Ile Ser Gly Tyr Ala Glu Leu Pro Leu Ser Glu Gln Lys Val
 35 40 45
 Lys Ser His Thr Tyr Thr Thr Leu Asp Glu Val Lys Asp Tyr Leu Ser
 50 55 60
 Lys Arg Gly Phe Val Glu Thr Arg Lys Gln Asp Gly Val Leu Arg Ile
 65 70 75 80
 Ala Gly Asp Val Arg Ala Arg Trp Leu Tyr Phe Arg Glu Asp Ile Lys
 85 90 95
 Asn Pro Ser Asp Lys Asp Lys Tyr Asn Pro Leu Pro Val Asn Arg Tyr
 100 105 110
 Arg Ser Glu Phe Tyr Leu Tyr Ile Asp Tyr Arg Ala Glu Arg Asn Trp
 115 120 125
 Leu Ser Ser Lys Met Asn Trp Thr Ala Ile Ala Gly Gly Glu Asn Thr
 130 135 140
 Ala Ala Gly Val Asp Ile Asn Arg Ala Phe Leu Gly Tyr Arg Phe Tyr
 145 150 155 160
 Lys Asn Pro Glu Thr Arg Thr Asp Phe Phe Met Glu Ile Gly Arg Ser
 165 170 175
 Gly Leu Gly Asp Leu Phe Glu Ser Glu Val Gln Phe Gln Ser Asn Phe
 180 185 190
 Asp Gly Leu His Ile Tyr Trp Thr Arg Glu Leu Ser Lys Asp Tyr Pro
 195 200 205
 Tyr Gln Val Ile Val His Gly Gly Pro Phe Val Val Asn Met Thr Lys
 210 215 220
 Lys His Tyr Ala Trp Val Val Glu Gly Ile Leu Asn Arg Leu Pro Lys
 225 230 235 240
 Gln Phe Phe Val Lys Cys Ser Val Val Asp Trp Asn Thr Phe Val Pro
 245 250 255
 Ser Glu Thr Ser Thr Thr Glu Lys Ala Ala Thr Asn Ala Met Lys Tyr
 260 265 270
 Lys Tyr Cys Val Trp Gln Trp Leu Val Gly Lys His Ser Gln Val Pro
 275 280 285
 Trp Ile Asn Gly Gln Lys Lys Pro Leu Tyr Leu Tyr Gly Ala Phe Leu
 290 295 300
 Met Asn Pro Leu Ala Lys Ala Thr Lys Thr Thr Leu Asn Gly Lys Glu
 305 310 315 320
 Asn Leu Ala Trp Phe Ile Gly Gly Thr Leu Gly Gly Leu Arg Lys Ala
 325 330 335
 Gly Asp Trp Ser Ala Thr Val Arg Tyr Glu Tyr Val Glu Ala Leu Ser
 340 345 350
 Val Pro Glu Ile Asp Val Ser Gly Ile Gly Arg Gly Asn Leu Leu Lys
 355 360 365
 Phe Trp Phe Ala Gln Ala Ile Ala Ala Asn Tyr Asp Pro Lys Glu Ala
 370 375 380
 Asn Gly Phe Thr Asn Tyr Lys Gly Phe Ser Ala Leu Tyr Met Tyr Gly
 385 390 395 400
 Ile Thr Asp Ser Leu Ser Phe Arg Ala Tyr Gly Ala Tyr Ser Lys Pro
 405 410 415
 Ala Asn Asp Lys Leu Gly Ser Asp Phe Thr Phe Arg Lys Phe Asp Leu
 420 425 430
 Gly Ile Ile Ser Ala Phe
 435

<210>778

<211>321

<212>PRT

<213>Chlamydia pneumoniae

<400>778

Ala Leu Leu Ala Pro Leu Ser Leu Gly Ile Leu Thr Ser Ser Ile Phe
 1 5 10 15

Gln Leu Asn Leu Leu Ser Asp Ile Cys Leu Ala Arg Tyr Val His Glu
 20 25 30
 Ile Gly Pro Leu Tyr Leu Met Tyr Ser Leu Lys Ile Tyr Gln Leu Pro
 35 40 45
 Ile His Leu Phe Gly Phe Gly Val Phe Thr Val Leu Leu Pro Ala Ile
 50 55 60
 Ser Arg Cys Val Gln Arg Glu Asp His Glu Arg Gly Leu Lys Leu Met
 65 70 75 80
 Lys Phe Val Leu Thr Leu Thr Met Ser Val Met Ile Ile Met Thr Ala
 85 90 95
 Gly Leu Leu Leu Leu Ala Leu Pro Gly Val Arg Val Leu Tyr Glu His
 100 105 110
 Gly Leu Phe Pro Gln Ser Ala Val Tyr Ala Ile Val Arg Val Leu Arg
 115 120 125
 Gly Tyr Gly Ala Ser Ile Ile Pro Met Ala Leu Ala Pro Leu Val Ser
 130 135 140
 Val Leu Phe Tyr Ala Gln Arg Gln Tyr Ala Val Pro Leu Phe Ile Gly
 145 150 155 160
 Ile Gly Thr Ala Leu Ala Asn Ile Val Leu Ser Leu Val Leu Gly Arg
 165 170 175
 Trp Val Leu Lys Asp Val Ser Gly Ile Ser Tyr Ala Thr Ser Ile Thr
 180 185 190
 Ala Trp Val Gln Leu Tyr Phe Leu Trp Tyr Tyr Ser Ser Lys Arg Leu
 195 200 205
 Pro Met Tyr Ser Lys Leu Leu Trp Glu Ser Ile Arg Arg Ser Ile Lys
 210 215 220
 Val Met Gly Thr Thr Met Leu Ala Cys Met Ile Thr Leu Gly Leu Asn
 225 230 235 240
 Ile Leu Thr Gln Thr Thr Tyr Val Ile Phe Leu Asn Pro Leu Thr Pro
 245 250 255
 Leu Ala Trp Pro Leu Ser Ser Ile Thr Ala Gln Ala Ile Ala Phe Leu
 260 265 270
 Ser Glu Ser Cys Ile Phe Leu Ala Phe Leu Phe Gly Phe Ala Lys Leu
 275 280 285
 Leu Arg Val Glu Asp Leu Ile Asn Leu Ala Ser Phe Glu Tyr Trp Arg
 290 295 300
 Gly Gln Arg Gly Leu Leu Gln Arg Gln His Val Met Gln Asp Thr Gln
 305 310 315 320
 Asn

<210>779

<211>225

<212>PRT

<213>Chlamydia pneumoniae

<400>779

Met Ser Arg Lys Asp Asn Glu Val Ser Leu Ala Arg Ser Ile Phe Asn
 1 5 10 15
 Ile Leu Ser Gly Thr Phe Cys Ser Arg Ile Thr Gly Ile Phe Arg Glu
 20 25 30
 Ile Ala Met Ala Thr Tyr Phe Gly Ala Asp Pro Ile Val Ala Ala Phe
 35 40 45
 Trp Leu Gly Phe Arg Thr Val Phe Phe Leu Arg Lys Ile Leu Gly Gly
 50 55 60
 Leu Ile Leu Glu Gln Ala Phe Ile Pro His Phe Glu Phe Leu Arg Ala
 65 70 75 80
 Gln Ser Leu Asp Arg Ala Ala Phe Phe Phe Arg Arg Phe Ser Arg Leu
 85 90 95
 Ile Lys Gly Ser Thr Ile Ile Phe Thr Leu Leu Ile Glu Ala Val Leu
 100 105 110
 Trp Val Val Leu Gln Tyr Val Glu Gly Thr Tyr Asp Met Ile Leu
 115 120 125
 Leu Thr Met Ile Leu Leu Pro Cys Gly Ile Phe Leu Met Met Tyr Asn
 130 135 140
 Val Asn Gly Ala Leu Leu His Cys Glu Asn Lys Phe Phe Gly Val Gly

145 150 155 160
 Leu Ala Pro Val Val Val Asn Ile Ile Trp Ile Phe Phe Val Ile Ala
 165 170 175
 Ala Arg His Ser Asp Pro Arg Glu Arg Ile Ile Gly Leu Ser Val Ala
 180 185 190
 Leu Val Ile Gly Phe Phe Phe Glu Trp Leu Ile Thr Val Pro Gly Val
 195 200 205
 Trp Lys Phe Leu Leu Glu Ala Lys Ser Pro Pro Gln Glu His Asp Ser
 210 215 220
 Val
 225
 <210>780
 <211>293
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>780
 Met Lys Val Leu Pro Pro Pro Ser Ile Pro Leu Leu Gly Ala His Thr
 1 5 10 15
 Ser Thr Ala Gly Gly Leu Lys Asn Ala Ile Tyr Glu Gly Arg Asp Ile
 20 25 30
 Gly Ala Ser Thr Val Gln Ile Phe Thr Ala Asn Gln Arg Gln Trp Gln
 35 40 45
 Arg Arg Ala Leu Lys Glu Glu Val Ile Glu Asp Phe Lys Ala Ala Leu
 50 55 60
 Lys Glu Thr Asp Leu Ser Tyr Ile Met Ser His Ala Gly Tyr Leu Ile
 65 70 75 80
 Asn Pro Gly Ala Pro Asp Pro Val Ile Leu Glu Lys Ser Arg Ile Gly
 85 90 95
 Ile Tyr Gln Glu Ile Leu Asp Cys Ile Thr Leu Gly Ile Ser Phe Val
 100 105 110
 Asn Phe His Pro Gly Ala Ala Leu Lys Ser Ser Lys Glu Asp Cys Met
 115 120 125
 Asn Lys Ile Val Ser Ser Phe Ser Gln Ser Ala Pro Leu Phe Asp Ser
 130 135 140
 Ser Pro Pro Leu Val Val Leu Leu Glu Thr Thr Ala Gly Gln Gly Thr
 145 150 155 160
 Leu Ile Gly Ser Asn Phe Glu Glu Leu Gly Tyr Leu Val Gln Asn Leu
 165 170 175
 Lys Asn Gln Ile Pro Ile Gly Val Cys Val Asp Thr Cys His Ile Phe
 180 185 190
 Ala Ala Gly Tyr Asp Ile Thr Ser Pro Gln Gly Trp Glu Asp Val Leu
 195 200 205
 Asn Glu Phe Asp Glu Tyr Val Gly Leu Ser Tyr Leu Arg Ala Phe His
 210 215 220
 Leu Asn Asp Ser Met Phe Pro Leu Gly Ala Asn Lys Asp Arg His Ala
 225 230 235 240
 Pro Leu Gly Glu Gly Tyr Ile Gly Lys Glu Ser Phe Lys Phe Leu Met
 245 250 255
 Thr Asp Glu Arg Thr Arg Lys Ile Pro Lys Tyr Leu Glu Thr Pro Gly
 260 265 270
 Gly Pro Glu Asn Trp Gln Lys Glu Ile Gly Glu Leu Leu Lys Phe Ser
 275 280 285
 Lys Asn Arg Asp Ser
 290
 <210>781
 <211>152
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>781
 Met Ala Arg Tyr Cys Gly Pro Lys Asn Arg Val Ala Arg Arg Phe Gly
 1 5 10 15
 Ala Asn Ile Phe Gly Arg Ser Arg Asn Pro Leu Leu Lys Lys Pro His
 20 25 30
 Pro Pro Gly Gln His Gly Met Gln Arg Lys Lys Lys Ser Asp Tyr Gly

35	40	45
Leu Gln Leu Glu Glu Lys	Gln Lys Leu Lys Ala Cys	Tyr Gly Met Ile
50	55	60
Met Glu Lys Gln Leu Val	Lys Ala Phe Lys Glu Val	Ile His Lys Gln
65	70	75
Gly Asn Val Ala Gln Met	Phe Leu Glu Arg Phe Glu	Cys Arg Leu Asp
85	90	95
Asn Met Val Tyr Arg Met	Gly Phe Ala Lys Thr Ile	Phe Ala Ala Gln
100	105	110
Gln Leu Val Ala His Gly	His Ile Leu Val Asn Gly	Arg Arg Val Asp
115	120	125
Arg Arg Ser Phe Phe Leu	Arg Pro Gly Met Gln Ile	Ser Leu Lys Arg
130	135	140
Lys Asn Leu Asn Asp Phe	Ser Leu	
145	150	

<210>782

<211>324

<212>PRT

<213>Chlamydia pneumoniae

<400>782

Met Glu Lys Lys Tyr Tyr	Ala Leu Ala Tyr Tyr	Ile Thr Arg Val
1	5	10
Asp Asn Pro His Glu Glu	Ile Ala Leu His Lys Lys	Phe Leu Glu Asp
20	25	30
Leu Asp Val Ser Cys Arg	Ile Tyr Ile Ser Glu Gln	Gly Ile Asn Gly
35	40	45
Gln Phe Ser Gly Tyr Glu	Pro His Ala Glu Leu Tyr	Met Gln Trp Leu
50	55	60
Lys Glu Arg Pro Asn Phe	Ser Lys Ile Lys Phe Lys	Ile His His Ile
65	70	75
Lys Glu Asn Ile Phe Pro	Arg Ile Thr Val Lys Tyr	Arg Lys Glu Leu
85	90	95
Ala Ala Leu Gly Cys Glu	Val Asp Leu Ser Lys Gln	Ala Lys His Ile
100	105	110
Ser Pro Gln Glu Trp His	Glu Lys Leu Gln Glu Asn	Arg Cys Leu Ile
115	120	125
Leu Asp Val Arg Asn Asn	Tyr Glu Trp Lys Ile Gly	His Phe Asp Asn
130	135	140
Ala Thr Leu Pro Asp Ile	Gln Thr Phe Arg Glu Phe	Pro Glu Tyr Ala
145	150	155
Glu Lys Leu Ala Gln Glu	Cys Asp Pro Glu Thr Thr	Pro Val Met Met
165	170	175
Tyr Cys Thr Gly Gly Ile	Arg Cys Glu Leu Tyr Ser	Pro Val Leu Leu
180	185	190
Glu Lys Gly Phe Lys Glu	Val Tyr Gln Leu Asp Gly	Gly Val Ile Ala
195	200	205
Tyr Gly Gln Gln Val Gly	Thr Gly Lys Trp Leu Gly	Lys Leu Phe Val
210	215	220
Phe Asp Asp Arg Leu Ala	Ile Pro Ile Asp Glu Ser	Asp Pro Asp Val
225	230	235
Ala Pro Ile Ala Glu Cys	Cys His Cys Gln Thr	Pro Ser Asp Ala Tyr
245	250	255
Tyr Asn Cys Ala Asn Thr	Asp Cys Asn Ala Leu Phe	Leu Cys Cys Asp
260	265	270
Glu Cys Ile His Gln His	Gln Gly Cys Cys Gly Glu	Glu Cys Ser Gln
275	280	285
Ser Pro Arg Val Arg Lys	Phe Asp Ser Ser Arg Gly	Asn Lys Pro Phe
290	295	300
Arg Arg Ala His Leu Cys	Glu Ile Ser Glu Asn Ser	Glu Ser Ala Ser
305	310	315
Cys Cys Leu Ile		320

<210>783

<211>222

<212>PRT

<213>Chlamydia pneumoniae

<400>783

Met Leu Met Met Leu Met Met Ile Ile Gly Ile Thr Gly Gly Ser Gly
 1 5 10 15
 Ala Gly Lys Thr Thr Leu Thr Gln Asn Ile Lys Glu Ile Phe Gly Glu
 20 25 30
 Asp Val Ser Val Ile Cys Gln Asp Asn Tyr Tyr Lys Asp Arg Ser His
 35 40 45
 Tyr Thr Pro Glu Glu Arg Ala Asn Leu Ile Trp Asp His Pro Asp Ala
 50 55 60
 Phe Asp Asn Asp Leu Leu Ile Ser Asp Ile Lys Arg Leu Lys Asn Asn
 65 70 75 80
 Glu Ile Val Gln Ala Pro Val Phe Asp Phe Val Leu Gly Asn Arg Ser
 85 90 95
 Lys Thr Glu Ile Glu Thr Ile Tyr Pro Ser Lys Val Ile Leu Val Glu
 100 105 110
 Gly Ile Leu Val Phe Glu Asn Gln Glu Leu Arg Asp Leu Met Asp Ile
 115 120 125
 Arg Ile Phe Val Asp Thr Asp Ala Asp Glu Arg Ile Leu Arg Arg Met
 130 135 140
 Val Arg Asp Val Gln Glu Gln Gly Asp Ser Val Asp Cys Ile Met Ser
 145 150 155 160
 Arg Tyr Leu Ser Met Val Lys Pro Met His Glu Lys Phe Ile Glu Pro
 165 170 175
 Thr Arg Lys Tyr Ala Asp Ile Ile Val His Gly Asn Tyr Arg Gln Asn
 180 185 190
 Val Val Thr Asn Ile Leu Ser Gln Lys Ile Lys Asn His Leu Glu Asn
 195 200 205
 Ala Leu Glu Ser Asp Glu Thr Tyr Tyr Met Val Asn Ser Lys
 210 215 220

<210>784

<211>503

<212>PRT

<213>Chlamydia pneumoniae

<400>784

Leu Arg Leu Ala Gly Ser Leu Ala Asp Arg Phe Gln Lys Arg Asn Ile
 1 5 10 15
 Ile Leu Ala Thr Arg Phe Ile Glu Ile Leu Cys Thr Ile Leu Gly Thr
 20 25 30
 Tyr Phe Phe Phe Ile Gln Ser Val Val Gly Gly Tyr Val Val Leu Ile
 35 40 45
 Leu Met Ala Cys His Thr Thr Ile Phe Gly Pro Ala Lys Leu Gly Ile
 50 55 60
 Leu Pro Glu Met Leu Pro Ser Glu Gln Leu Ser Gln Ala Asn Gly Ile
 65 70 75 80
 Met Thr Ala Ala Thr Tyr Thr Gly Ser Ile Leu Gly Ser Cys Leu Ala
 85 90 95
 Pro Leu Leu Val Asp Val Thr His Arg Leu Gly Val Asn Ser Tyr Val
 100 105 110
 Trp Pro Thr Leu Met Cys Val Ile Val Ser Ile Ile Ser Thr Leu Ile
 115 120 125
 Ser Phe Cys Ile Arg Pro Ser Asn Val Lys Asn Val Lys Gln Lys Ile
 130 135 140
 Thr Leu Val Ser Phe Lys Asp Leu Trp Lys Val Leu Lys Asp Thr Arg
 145 150 155 160
 Met Ile His Tyr Leu Thr Val Ser Ile Phe Leu Gly Ser Phe Phe Leu
 165 170 175
 Leu Ile Gly Ala Tyr Thr Gln Leu Glu Ile Ile Pro Phe Val Glu Phe
 180 185 190
 Ile Leu Lys Tyr Pro Lys His Tyr Gly Ala Tyr Leu Phe Pro Ile Val
 195 200 205
 Ala Leu Gly Val Gly Thr Gly Ser Tyr Ile Thr Gly Lys Ile Ser Gly
 210 215 220

Lys Asp Ile Lys Ile Gly Tyr Val Pro Leu Ala Ala Ile Gly Leu Ala
 225 230 235 240
 Leu Val Phe Met Gly Leu Tyr Ala Phe Ala Cys Ser Ile Leu Phe Val
 245 250 255
 Leu Phe Phe Leu Leu Ala Leu Gly Phe Leu Gly Gly Val Tyr Gln Val
 260 265 270
 Pro Leu His Ala Tyr Val Gln Tyr Ala Ser Pro Glu His Lys Arg Gly
 275 280 285
 Gln Ile Leu Ala Ala Asn Asn Phe Leu Asp Phe Phe Gly Val Leu Val
 290 295 300
 Ala Ala Gly Val Ile Arg Val Leu Gly Ser Asn Leu Gly Leu Ser Pro
 305 310 315 320
 Glu Thr Ser Phe Phe Tyr Ile Gly Trp Phe Val Leu Ala Val Ser Ile
 325 330 335
 Trp Thr Leu Trp Ile Trp Arg Glu His Val Tyr Arg Leu Leu Leu Gly
 340 345 350
 Ile Ile Leu Arg Arg Gln Leu Gly Tyr Tyr Leu Lys Ile His Gln Ser
 355 360 365
 Ser Ser Pro Lys Cys Tyr Phe Val Ala Val Gln Ser Tyr Arg Glu Ile
 370 375 380
 Arg Arg Val Leu Ala Ala Leu Thr Lys Thr Val Arg Ser Arg Val Ile
 385 390 395 400
 Ile Leu Asp Gln Lys Leu Val Pro Gly Trp Arg Ala Trp Leu Leu Ser
 405 410 415
 Trp Cys Val Pro Thr Val Val Ser Ser Val Arg Asp Asn Asp Ser Glu
 420 425 430
 Ala Gln Asp Ala Trp Ala Val Leu Gln Ala Asn His Leu Lys Thr Ser
 435 440 445
 Leu Lys Lys Phe Pro Asp Val Ser Val Val Cys Leu Gly Leu Pro Lys
 450 455 460
 Asn Val Glu Arg Phe Thr Ser Ile Leu Gln Glu Gln Gly Ile Asp Leu
 465 470 475 480
 His Pro Ile Gln Leu Val Gln Lys Glu Gly Lys Lys Arg Val Ile Tyr
 485 490 495
 Thr Leu Val Phe Pro His Ala
 500

<210>785

<211>644

<212>PRT

<213>Chlamydia pneumoniae

<400>785

Ile His Gly Leu Lys Ile Ser Glu Ile Lys Ile Leu Leu Leu Ser Ser
 1 5 10 15
 Ile Leu Gln Thr Gln Gly Asp Leu His Tyr Ile Leu Gln Leu Leu Thr
 20 25 30
 His Pro Gln Leu Gln Gln Pro Ile Asp Gln Asn Lys Val Pro Tyr Leu
 35 40 45
 Ile Lys Lys Leu Ser Ser Glu Trp Gly Lys Ile Ser Ser Lys Glu Arg
 50 55 60
 Ala Ser Gly Gln Gln Met Lys Ala Leu Gly Asp Leu Ile Leu Glu Glu
 65 70 75 80
 Tyr Pro Phe His Gln Glu Gly Gly Arg Val Ser Gln Val Glu Val Trp
 85 90 95
 Glu Thr Thr Val Pro Leu Ile Tyr Phe Ile Gln Glu Arg Ile Asn Leu
 100 105 110
 Tyr Leu Ser Ser Ser Gln His Ser Tyr Glu Asp Leu Phe Gln Asn Val
 115 120 125
 Phe Ser Cys Leu Glu Lys Ile Phe Val Leu Ser Pro Glu Glu Thr Ser
 130 135 140
 Phe Ile Thr Thr Leu Arg Asn Ser Leu Phe Pro Thr Phe Ala Thr Ser
 145 150 155 160
 Ser Cys Ser Leu Leu Phe Phe Thr Asp Phe Cys Leu Asp Phe Leu Leu
 165 170 175
 His Phe His Lys Pro Ser Pro Leu Tyr Asp Lys Pro Gly Pro Tyr Ile

PCT/LB98/01890

```
<210>786
<211>439
<212>PRT
<213>Chlamydia pneumoniae
<400>786
```

Pro Val Lys Pro Phe Asn Ile Phe Asp Ser Asn Ser Ser Ile Gln Gly
 1 5 10 15
 Lys Phe Phe Leu Glu Ala Ser Ala Gly Thr Gly Lys Thr Phe Thr Ile
 20 25 30
 Glu Gln Ile Val Leu Arg Ala Leu Ile Glu Gly Ser Leu Thr His Val
 35 40 45
 Glu His Ala Leu Ala Ile Thr Phe Thr Asn Ala Ser Thr Asn Glu Leu
 50 55 60
 Lys Val Arg Ile Lys Asp Asn Leu Ala Gln Thr Leu Arg Glu Leu Lys
 65 70 75 80
 Ala Val Leu Asn Ser Gln Pro Ala Ser Leu Pro Thr Tyr Leu Asp Ile
 85 90 95
 Asn Cys Asn Val Lys Gln Ile Tyr Met Gln Val Arg Asn Ala Leu Ala
 100 105 110
 Thr Leu Asp Gln Met Ser Leu Phe Thr Ile His Gly Phe Cys Asn Phe
 115 120 125
 Val Leu Glu Gln Tyr Phe Pro Lys Thr Arg Leu Ile His Lys Asn Pro
 130 135 140
 Ala Leu Thr His Ser Gln Leu Val Leu His His Ile Thr Asn Tyr Leu
 145 150 155 160
 Lys Gln Asp Leu Trp Lys Asn Val Leu Phe Gln Glu Gln Phe His Leu
 165 170 175
 Leu Ala Val Arg Tyr Asn Val Thr Ser Lys His Thr Ser Ser Leu Val
 180 185 190
 Asp Lys Leu Leu Ala Ser Tyr Thr Gln Pro Ile Ser Ser Tyr Phe Ser
 195 200 205
 Ser Arg Val Glu Arg Leu Glu Gln Ile Ser Leu Trp His Gln Gln Ile
 210 215 220
 Tyr Asn Ser Leu Leu Glu Ile Pro Lys Gln Val Phe Leu Asp Gln Leu
 225 230 235 240
 Thr Ala His Ile Ser Gly Phe Lys Lys Gln Pro Phe Ser Ile Leu Asp
 245 250 255
 Asp Leu His His Phe Val Asp Leu Leu Tyr Thr Ser Glu Thr His Ser
 260 265 270
 Ser Leu Phe Ser Phe Phe Lys Ile Ala Glu Thr Phe Asn Phe Lys His
 275 280 285
 Arg Leu Ala Arg Tyr Lys Pro Cys Ala Ala Phe Thr Val Leu Glu Asn
 290 295 300
 Met Ser Trp Val Glu Arg Thr Leu Glu Phe Cys Asn Leu Asp Arg Ile
 305 310 315 320
 Phe Asn Thr Leu Leu Val Asp Leu Gln Glu Tyr Leu Lys Gln Asn Tyr
 325 330 335
 Thr Pro Trp Leu Ser Pro Asp Glu Ser Val Phe Ala Leu Glu Lys Leu
 340 345 350
 Leu Ser Ser Ser Glu Ala Gln Pro Val Val Gln Ala Leu Arg Glu Gln
 355 360 365
 Tyr Gln Leu Val Leu Ile Asp Glu Phe Gln Asp Thr Asp Lys Gln Gln
 370 375 380
 Trp Ser Ile Phe Ser Asn Leu Phe Ile Ser Pro Lys Phe Thr Gly Ser
 385 390 395 400
 Leu Phe Leu Ile Gly Asp Pro Lys Gln Ser Ile Tyr Glu Trp Arg Ser
 405 410 415
 Ala Asp Leu Pro Thr Tyr Leu Thr Ala Lys Ser Ser Phe Ser Glu Asp
 420 425 430
 Lys Gln Leu Gln Leu Val Asn
 435

<210>787

<211>489

<212>PRT

<213>Chlamydia pneumoniae

<400>787

Leu Met Asn Phe Lys Ile Gln Thr Ser Asn Asn Gly Ala Ser Phe Arg
 1 5 10 15
 Ile Ser Leu Phe Leu Arg Asn Leu Gln Asp Arg Tyr Phe Leu Ser Glu

	20		25		30
Thr	Pro	Ser	Asn	Leu	Phe
	35		40		45
Ile	Leu	Gln	Pro	Asn	Leu
	50		55		60
Ser	Ile	Asn	Tyr	Arg	Ser
	65		70		75
Ile	Phe	Gly	Lys	Ile	Ser
		85		90	
Ile	Glu	Tyr	His	Ala	Leu
		100		105	
Pro	Pro	His	Ala	Pro	Ile
		115		120	
Gln	Ala	Leu	Trp	Ile	Phe
		130		135	
Lys	Ile	Pro	Leu	Gly	Asn
		145		150	
Ala	Phe	Glu	Leu	Ile	Ser
			165		170
Asn	Lys	Ser	Ile	Phe	His
			180		185
Leu	Leu	Glu	Ala	Ile	Leu
			195		200
Ile	Leu	Phe	Ser	Ser	Leu
			210		215
Lys	Lys	Glu	Asp	Phe	Thr
			225		230
Ser	His	His	Gly	Leu	Leu
				245	
Gly	Asn	Val	Leu	Phe	Ser
			260		265
Met	Glu	Lys	Leu	Cys	Gly
			275		280
His	Gln	Leu	Leu	His	Leu
			290		295
Glu	Glu	Leu	Ala	Ile	Ser
			305		310
Ile	Thr	Thr	Ile	His	Ser
				325	
Cys	Pro	Gly	Ile	Glu	Lys
			340		345
Leu	Arg	Glu	Met	Tyr	Val
			355		360
Leu	Pro	Ile	Ser	Thr	Gln
			370		375
Thr	Asn	Tyr	Val	Lys	Leu
			385		390
Ala	Ile	His	Leu	His	Gln
				405	
Pro	Lys	Asp	His	Gly	His
				420	
Glu	Thr	Phe	Ala	Leu	Lys
				435	
Ser	Ser	Thr	Lys	Phe	Leu
				440	
Pro	Tyr	Ser	Asn	Ser	Arg
				450	
Lys	Gln	Glu	Phe	Leu	Tyr
				465	
				470	
				475	
				480	
				485	

<210>788

<211>260

<212>PRT

<213>Chlamydia pneumoniae

<400>788

Gly Pro Trp Thr Cys Tyr His Ser Val Glu Ser Ala Thr Phe Arg Asp
 1 5 10 15
 Val Arg Ser Lys Ser Asp Thr Pro Glu Asn Tyr Phe Phe Leu Leu Ile
 20 25 30
 Tyr Lys Ile Pro Ile Gly His Ser Gln Arg Leu Ala Ile Asp Pro Ile
 35 40 45
 Phe Gln Leu Pro Ile Ser Lys Gln Gln Leu Pro Leu Gly Glu Lys Thr
 50 55 60
 Gly Ile Leu Ile His Lys Ile Leu Glu Ser Ile Gln Phe Ser Leu Leu
 65 70 75 80
 Gln Asp Thr Glu Tyr Leu Met Ser Thr Ile Met Arg Phe Ile Lys His
 85 90 95
 Thr His Leu Glu Gly Phe Glu Glu Thr Ile Leu Lys Leu Leu Ser Lys
 100 105 110
 Thr Phe Phe Ser Pro Leu Thr Phe Ser Ser Gln Thr Phe Ser Leu Ser
 115 120 125
 Gln Val Leu Pro Asn Lys Ile Phe Arg Glu Thr Ser Phe Leu Phe Leu
 130 135 140
 Glu Asn Gln Glu Leu Trp Gln Gly Val Ile Asp Leu Phe Phe Glu His
 145 150 155 160
 Glu Gly Lys Tyr Tyr Ile Ile Asp Trp Lys Thr Ser Phe Leu Gly Glu
 165 170 175
 Thr Asn Ser Asp Tyr Ser Lys Ser Asn Leu Ser Ile Tyr Ile Lys Gln
 180 185 190
 Glu Lys Leu Asp Tyr Gln Gly Arg Ile Tyr Val Lys Ala Val Arg Lys
 195 200 205
 Phe Leu Asn Gln Phe Glu Ile Asp Asp Asp Val Glu Leu Gly Val Ile
 210 215 220
 Phe Ile Arg Gly Ile Asp Thr Gln Gly Asn Gly Phe Phe Ala Leu Asn
 225 230 235 240
 Ser Ser Glu Asp Ile Pro Asn Phe Asn Pro Lys Ala Ile Gln Lys Cys
 245 250 255
 Gln Ala Tyr His
 260

<210>789

<211>344

<212>PRT

<213>Chlamydia pneumoniae

<400>789

Cys Lys Val Leu Phe Lys Leu Met Ser Tyr Ser Leu Arg Asn Lys Lys
 1 5 10 15
 Thr Lys Ile Cys Val Tyr Ile Ile Ile Ala Leu Gly Ile Leu Ser Phe
 20 25 30
 Arg Ser Ile Pro Gln Glu Val Tyr Asp Lys Ile Arg Ser Ser Phe Val
 35 40 45
 Ser Leu His Val Lys Phe Phe Pro Lys Ile Lys Gln Ala Pro Ser Ser
 50 55 60
 His Leu Ala Asn Leu Glu Leu Glu Asn Leu Val Leu Lys Glu Arg Val
 65 70 75 80
 Ala Ser Leu Glu Glu Lys Leu Lys Leu Tyr Glu Val Ser Asn His Thr
 85 90 95
 Pro Pro Leu Phe Pro Glu Ile Leu Thr Pro Tyr Phe His Lys Leu Val
 100 105 110
 Glu Gly Lys Val Val Tyr Arg Asp Tyr Thr His Trp Ser Ser Ser Cys
 115 120 125
 Trp Val Asn Val Gly Lys Thr His Gly Ile Lys Lys Asn Ser Pro Val
 130 135 140
 Leu Ser Gly Asn Val Leu Val Gly Leu Val Asp Tyr Val Gly Glu His
 145 150 155 160
 Gln Ser Arg Ile Arg Leu Ile Thr Asp Val Gly Met Lys Pro Ser Val
 165 170 175
 Val Ala Met Arg Gly Asp Ile Gln Ser Trp Trp Ile Lys His Ser Leu
 180 185 190
 Arg Glu Leu Ile Arg Gln Val Glu Gln Ile Ser His Ala Tyr Ile Leu

WO 99/27105

195
 Glu Lys Asp Lys Tyr Glu Lys Ile Ser Gln Leu Gln Glu Leu Asp Ser
 210
 Leu Ile Gln Gly Glu Gly Glu Asn Gln Ala Leu Leu Arg Gly Ile Leu
 225
 Ser Gly Val Gly Gly Ala Leu Trp Lys Glu Gly Ser Leu Cys Leu Glu
 245
 Gly Glu Gly Phe Tyr Phe Ser Glu Gly Lys Thr Leu Leu Pro Gly Asp
 260
 Ile Leu Val Thr Thr Gly Leu Asp Gly Val Phe Pro Pro Gly Leu Leu
 275
 Val Ala Arg Val Thr Lys Val Lys Ala Pro Arg Asp Gly Ala Cys Thr
 290
 Phe Lys Ile Glu Ala Gln Ser Leu Glu Glu Lys Leu Met Glu Leu Asp
 305
 Gln Leu Phe Ile Leu Pro Pro Leu Glu Phe Asn Pro Asn Asp Arg Pro
 325
 Asp Ile Phe Gly Leu Leu Trp Asp
 340
 <210>790
 <211>395
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>790
 Met Ser Phe Phe Asn His Ile Pro Thr Phe Ser Pro Asp Ala Ile Leu
 1 5 10 15
 Gly Leu Gln Asn Val Phe Phe Ala Asp Lys Arg Pro Glu Lys Val Asn
 20 25 30
 Leu Val Ile Gly Val Tyr Glu His Pro Gln Lys Arg Tyr Gly Gly Leu
 35 40 45
 Ser Cys Ile Arg Lys Ala Gln Thr Val Ile Leu Glu Glu Gln Asn
 50 55 60
 Lys Ser Tyr Leu Pro Ile Ser Gly Leu Gln Ile Phe Leu Asp Glu Met
 65 70 75 80
 Arg Glu Leu Val Phe Gly Ala Val Asp Pro Ser Ala Ile Val Gly Phe
 85 90 95
 Gln Ser Leu Gly Gly Thr Gly Ala Leu His Leu Gly Ala Arg Leu Leu
 100 105 110
 Ser Val Ala Lys Gly Ser Gly Lys Val Tyr Val Pro Glu Gln Thr Trp
 115 120 125
 Ser Asn His Ile Arg Ile Phe Ser Gln Glu Gly Leu Glu Val Ile Arg
 130 135 140
 Tyr Pro Tyr Tyr Ser Lys Glu Gln Lys Gln Leu Leu Phe Glu Pro Leu
 145 150 155 160
 Ile Ala Phe Leu Lys Glu Val Glu Lys Asn Ser Val Ile Leu Leu His
 165 170 175
 Gly Cys Cys His Asn Pro Thr Gly Val Asp Phe Thr Glu Asp Met Trp
 180 185 190
 Lys Glu Leu Ala Ile Leu Met Lys Glu Arg Glu Leu Ile Pro Phe Phe
 195 200 205
 Asp Thr Ala Tyr Gln Gly Phe Ala His Gly Ile Glu Leu Asp Arg Lys
 210 215 220
 Pro Ile Glu Ile Phe Ile Ser Glu Gly Asn Thr Val Leu Val Ala Ala
 225 230 235 240
 Ser Ser Ser Lys Asn Phe Ala Leu Tyr Gly Glu Arg Val Gly Tyr Phe
 245 250 255
 Ala Val His Ser Thr Phe Thr Asp Glu Leu Val Lys Ile His Ser Phe
 260 265 270
 Leu Glu Glu Lys Ile Arg Gly Glu Tyr Ser Ser Pro Gln Arg Trp Gly
 275 280 285
 Val Glu Ile Val Ser Thr Ile Leu Ser Asn Pro Tyr Leu Lys Glu Glu
 290 295 300
 Trp Gln Ser Glu Leu Asn Phe Ile Arg Glu Ser Leu Gly Lys Met Arg
 305 310 315 320

WO 99/27105

PCT/IB98/01890

Thr Arg Phe Val Gln Ala Leu Arg Lys Val Ala Gly His Thr Phe Asp
 325 330 335
 Phe Leu Leu Ser Gln His Gly Phe Phe Ala Tyr Pro Gly Phe Ser Asp
 340 345 350
 Lys Gln Val Leu Phe Leu Arg Glu Gln His Ala Val Tyr Thr Ala
 355 360 365
 Gly Gly Arg Met Asn Leu Asn Gly Ile Thr Glu Lys Asn Ile Asp His
 370 375 380
 Val Val Gln Ser Phe Ile Gln Ala Tyr Glu Leu
 385 390 395
 <210>791
 <211>733
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>791
 Glu Tyr Ile Phe Arg Leu Lys Thr Gly Asp Ile Val Asp Tyr Leu Glu
 1 5 10 15
 Lys Leu Gln Val Leu Ile Glu Glu Gly Gln Ser Ala Asn Phe Leu Ser
 20 25 30
 Leu Trp Glu Glu Tyr Cys Phe Asn Asp Val Val Arg Gly Arg Glu Leu
 35 40 45
 Val Glu Ile Leu Glu Lys Val Lys Ser Ser Ser Leu Ala Ser Leu Phe
 50 55 60
 Gly Lys Ile Val Asp Thr Val Val Pro Leu Trp Glu Lys Ile Pro Glu
 65 70 75 80
 Gly Lys Asp Lys Asp Arg Val Leu Gln Leu Ile Leu Asp Leu Gln Thr
 85 90 95
 Ser Asn Ser Gln Met Phe Phe Asp Ile Ala Thr Glu Tyr Val Asn Lys
 100 105 110
 Lys Tyr Ser Gly Glu Glu Asn Phe Asn Glu Ala Leu Arg Val Val Gly
 115 120 125
 Leu Arg Asp Gly Arg Asp Phe Gln Phe Ser Leu Ser Arg Phe Asp Phe
 130 135 140
 Leu Met His Met His Lys Gly Asn Phe Val Phe His Gln Gly Gly Trp
 145 150 155 160
 Gly Val Gly Glu Val Met Gly Val Ser Phe Leu Gln Gln Lys Val Leu
 165 170 175
 Ile Glu Phe Glu Gly Ile Met Ser Ala Lys Asp Ile Ser Phe Glu Thr
 180 185 190
 Ala Phe Lys Ser Leu Thr Pro Leu Ser Gly Asp His Phe Leu Ser Arg
 195 200 205
 Arg Phe Gly Asp Pro Asp Gly Phe Glu Ala Phe Ala Lys Glu Asn Pro
 210 215 220
 Ile Glu Val Val Glu Ile Leu Leu Arg Asp Leu Gly Pro Lys Thr Ala
 225 230 235 240
 Lys Glu Ile Lys Asp Glu Leu Val Asp Leu Val Ile Pro Glu Ala Asp
 245 250 255
 Trp Asn Arg Trp Trp Gln Ser Ala Lys Thr Lys Ile Lys Lys Gly Thr
 260 265 270
 Arg Ile Ile Ser Pro Asp Asn Pro Lys Glu Pro Tyr Val Leu Ser Asp
 275 280 285
 Ala Gly Cys Ser His Met Gly Gln Leu Glu Arg Lys Leu Gly Leu Ser
 290 295 300
 Leu Asn Ser Ala Glu Lys Ile Ser Leu Ile Tyr His Phe Ile Arg Asp
 305 310 315 320
 Leu His Ser Glu Leu Lys Asn Ile Glu Ile Arg Lys Ser Leu Val Lys
 325 330 335
 Ala Leu Gln Asp Leu Asp Val Glu Glu Gly Asn Lys Ser Leu Ile Leu
 340 345 350
 Gln Arg Glu Leu Leu Leu Ser Glu Tyr Leu Gly Ile Lys Asp Ala Ser
 355 360 365
 Ile Asp Lys Glu Tyr Ile Thr Ser Leu Ser Glu Asp Thr Ser Arg
 370 375 380
 Leu Leu Glu Asn Met Pro Ile Val Ala Leu Gln Lys Ser Phe Leu Ser

385 390 395 400
 Leu Val Arg Lys Tyr Ser Ser Phe Trp Gln Gln Val Phe Met Gln Ile
 405 410 415
 Leu Leu Tyr Thr Thr Ser Pro Thr Met Arg Asp Phe Val Tyr Lys Thr
 420 425 430
 Ile Lys Asn Asp Pro Ser Ser Val Glu Val Leu Lys Lys Arg Leu Leu
 435 440 445
 Asp Ser Ala His Gln Pro Met Met Phe Pro Glu Leu Phe Val Trp Phe
 450 455 460
 Phe Leu Lys Leu Gly Asn His Glu Asp Gly Leu Phe Asp Pro Glu Asp
 465 470 475 480
 Lys Glu Val Leu Arg Leu Phe Leu Glu Ser Ala Leu Asn Phe Met Tyr
 485 490 495
 Gln Val Ala Ser Thr Pro His Lys Glu Leu Gly Lys Lys Leu His His
 500 505 510
 Tyr Leu Val Gly Gln Arg Tyr Leu Ala Val Arg Gln Met Ile Glu Gly
 515 520 525
 Ala Ser Leu Pro Phe Leu Lys Glu Leu Leu Leu Ser Thr Lys Cys
 530 535 540
 Pro Gln Phe Ser Ser Ser Asp Leu Asn Val Leu Gln Ser Leu Ala Glu
 545 550 555 560
 Val Val Gln Pro Thr Leu Lys Lys His Lys Ser Asn Val Glu Glu Glu
 565 570 575
 Asn Val Leu Trp Ser Thr Ser Glu Ser Phe Ser Arg Met Lys Ala Lys
 580 585 590
 Leu Gln Ser Leu Val Gly Lys Glu Met Val Asp Asn Ala Lys Glu Ile
 595 600 605
 Glu Asp Ala Arg Ser Leu Gly Asp Leu Arg Glu Asn Ser Glu Tyr Lys
 610 615 620
 Phe Ala Leu Glu Lys Arg Ala Arg Leu Gln Glu Glu Ile Arg Val Leu
 625 630 635 640
 Ser Glu Glu Ile Asn Arg Ala Arg Ile Leu Thr Lys Asp Leu Val Phe
 645 650 655
 Thr Asp Lys Val Gly Val Gly Cys Lys Val Thr Leu Lys Gly Asp Ala
 660 665 670
 Gly Glu Val Val Glu Tyr Thr Ile Leu Gly Pro Trp Asp Ala Asp Pro
 675 680 685
 Asp Ser Cys Ile Leu Ser Leu Gln Ser Lys Leu Ala Gln Asn Met Leu
 690 695 700
 Gly Lys Lys Leu Asn Asp Val Val Ile Leu Gln Gly Lys Glu Tyr Lys
 705 710 715 720
 Ile Ser Arg Ile Gln Ser Ile Trp Glu Glu His Gly Ala
 725 730

<210>792

<211>149

<212>PRT

<213>Chlamydia pneumoniae

<400>792

Thr Lys Met Met Val Ile Val Met Asn Ser Lys Ser Ala Gln Lys Ile
 1 5 10 15
 Ile Asp Ser Ile Lys Gln Ile Leu Thr Ile Tyr Asn Ile Asp Phe Asp
 20 25 30
 Pro Ser Phe Gly Ser Ser Leu Ser Asp Ser Asp Ala Asp Tyr Glu
 35 40 45
 Tyr Leu Ile Thr Lys Thr Gln Glu Lys Ile Gln Glu Leu Asp Lys Arg
 50 55 60
 Ala Gln Glu Ile Leu Thr Gln Thr Gly Met Ser Lys Glu Gln Met Glu
 65 70 75 80
 Val Phe Ala Asn Asn Pro Asp Asn Phe Ser Pro Glu Glu Trp Leu Ala
 85 90 95
 Leu Glu Lys Val Arg Ser Ser Cys Asp Glu Tyr Arg Lys Glu Thr Glu
 100 105 110
 Asn Leu Ile Asn Glu Ile Thr Leu Asp Leu His Pro Thr Lys Glu Ser
 115 120 125

Lys Arg Pro Lys Gln Lys Leu Ser Ser Thr Lys Lys Asn Lys Lys Lys
 130 135 140
 Asn Trp Ile_Pro Leu
 145
 <210>793
 <211>469
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>793
 Ile Phe Met Lys Ile Thr Val Asn Arg Gly Leu Asp Leu Ser Leu Gln
 1 5 10 15
 Gly Ser Pro Lys Glu Ser Gly Phe Tyr Asn Lys Ile Asp Pro Glu Phe
 20 25 30
 Val Ser Ile Asp Leu Arg Pro Phe Gln Pro Leu Ser Leu Lys Leu Lys
 35 40 45
 Val Glu Gln Gly Asp Ala Val Cys Ser Gly Ala Pro Ile Ala Glu Tyr
 50 55 60
 Lys His Phe Pro Asn Thr Tyr Ile Thr Ser His Val Ser Gly Val Val
 65 70 75 80
 Thr Ala Ile Arg Arg Gly Asn Lys Arg Ser Leu Leu Asp Val Ile Ile
 85 90 95
 Lys Lys Thr Pro Gly Pro Thr Ser Thr Glu Tyr Thr Tyr Asp Leu Gln
 100 105 110
 Thr Leu Ser Arg Ser Asp Leu Ser Glu Ile Phe Lys Glu Asn Gly Leu
 115 120 125
 Phe Ala Leu Ile Lys Gln Arg Pro Phe Asp Ile Pro Ala Ile Pro Thr
 130 135 140
 Gln Thr Pro Arg Asp Val Phe Ile Asn Leu Ala Asp Asn Arg Pro Phe
 145 150 155 160
 Thr Pro Ser Pro Glu Lys His Leu Ala Leu Phe Ser Ser Arg Glu Glu
 165 170 175
 Gly Phe Tyr Val Phe Val Val Gly Val Arg Ala Ile Ala Lys Leu Phe
 180 185 190
 Gly Leu Arg Pro His Ile Val Phe Arg Asp Arg Leu Thr Leu Pro Thr
 195 200 205
 Gln Glu Leu Lys Thr Ile Ala His Leu His Thr Val Ser Gly Pro Phe
 210 215 220
 Pro Ser Gly Ser Pro Ser Ile His Ile His Ser Val Ala Pro Ile Thr
 225 230 235 240
 Asn Glu Lys Glu Val Val Phe Thr Leu Ser Phe Gln Asp Val Leu Thr
 245 250 255
 Ile Gly His Leu Phe Leu Lys Gly Arg Ile Leu His Glu Gln Val Thr
 260 265 270
 Ala Leu Ala Gly Thr Ala Leu Lys Ser Ser Leu Arg Arg Tyr Val Ile
 275 280 285
 Thr Thr Lys Gly Ala Ser Phe Ser Ser Leu Ile Asn Leu Asn Asp Ile
 290 295 300
 Ser Asp Asn Asp Thr Leu Ile Ser Gly Asp Pro Leu Thr Gly Arg Leu
 305 310 315 320
 Cys Lys Lys Glu Glu Glu Pro Phe Leu Gly Phe Arg Asp His Ser Ile
 325 330 335
 Ser Val Leu His Asn Pro Thr Lys Arg Glu Leu Phe Ser Phe Leu Arg
 340 345 350
 Ile Gly Phe Asn Lys Pro Thr Phe Thr Lys Thr Tyr Leu Ser Gly Phe
 355 360 365
 Phe Lys Lys Lys Arg Thr Tyr Thr Asn Pro Asp Thr Asn Leu His Gly
 370 375 380
 Glu Thr Arg Pro Ile Ile Asp Thr Asp Ile Tyr Asp Lys Val Met Pro
 385 390 395 400
 Met Arg Ile Pro Val Val Pro Leu Ile Lys Ala Val Ile Thr Lys Asn
 405 410 415
 Phe Asp Leu Ala Asn Glu Leu Gly Phe Leu Glu Val Cys Gly Glu Asp
 420 425 430
 Phe Ala Leu Pro Thr Leu Ile Asp Pro Ser Lys Thr Glu Met Leu Thr

435 440 445
 Ile Val Lys Glu Ser Leu Ile Glu Tyr Ala Lys Glu Ser Gly Ile Leu
 450 — 455 460
 Thr Pro His Gln Asp
 465
 <210>794
 <211>313
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>794
 Glu Met Ser Ser Leu Thr Leu Ser Arg Arg Pro Arg Arg Asn Arg Lys
 1 5 10 15
 Thr Ala Ala Ile Arg Asp Leu Leu Ala Glu Thr His Leu Ser Pro Lys
 20 25 30
 Asp Leu Ile Ala Pro Phe Phe Val Lys Tyr Gly Asn Asn Ile Lys Glu
 35 40 45
 Glu Ile Pro Ser Leu Pro Gly Val Phe Arg Trp Ser Leu Asp Leu Leu
 50 55 60
 Leu Lys Glu Ile Glu Arg Leu Cys Thr Tyr Gly Leu Arg Ala Val Met
 65 70 75 80
 Leu Phe Pro Ile Ile Pro Asp Asp Leu Lys Asp Ala Tyr Gly Ser Tyr
 85 90 95
 Ser Ser Asn Pro Lys Asn Ile Leu Cys His Ser Ile His Glu Ile Lys
 100 105 110
 Asn Ala Phe Pro His Leu Cys Leu Ile Ser Asp Ile Ala Leu Asp Pro
 115 120 125
 Tyr Thr Thr His Gly His Asp Gly Ile Phe Leu Asn Gly Glu Val Leu
 130 135 140
 Asn Asp Glu Ser Val Arg Ile Phe Gly Asn Ile Ala Thr Leu His Ala
 145 150 155 160
 Glu Met Gly Ala Asp Ile Val Ala Pro Ser Asp Met Met Asp Gly Arg
 165 170 175
 Ile Gly Tyr Ile Arg Ser Lys Leu Asp Gln Ser Gly Tyr Ser Lys Thr
 180 185 190
 Ser Ile Met Ser Tyr Ser Val Lys Tyr Ala Ser Cys Leu Tyr Ser Pro
 195 200 205
 Phe Arg Asp Ala Leu Ser Ser His Val Thr Ser Gly Asp Lys Lys Gln
 210 215 220
 Tyr Gln Met Asn Pro Lys Asn Val Leu Glu Ala Leu Leu Glu Ser Ser
 225 230 235 240
 Leu Asp Glu Glu Glu Gly Ala Asp Ile Leu Met Val Lys Pro Ala Gly
 245 250 255
 Leu Tyr Leu Asp Val Ile Tyr Arg Ile Arg Gln Asn Thr Cys Leu Pro
 260 265 270
 Leu Ala Ala Tyr Gln Val Ser Gly Glu Tyr Ala Met Ile Leu Ser Ala
 275 280 285
 Phe Gln Gln Gly Trp Leu Asp Lys Glu Thr Leu Phe His Glu Ser Leu
 290 295 300
 Ile Ala Ile Lys Arg Leu Ala Gln Ile
 305 310
 <210>795
 <211>128
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>795
 Phe Ser Gly Arg Cys Pro Phe Ser Phe Glu Val Phe Met Leu Gly Lys
 1 5 10 15
 Glu Glu Glu Phe Thr Cys Lys Gln Lys Gln Cys Leu Ser His Phe Val
 20 25 30
 Thr Asn Leu Thr Ser Asp Val Phe Ala Leu Lys Asn Leu Pro Glu Val
 35 40 45
 Val Lys Gly Ala Leu Phe Ser Lys Tyr Ser Arg Ser Val Leu Gly Leu
 50 55 60
 Arg Ala Leu Leu Leu Lys Glu Phe Leu Ser Asn Glu Glu Asp Gly Asp

65 70 75 80
 Val Cys Asp Glu Ala Tyr Asp Phe Glu Thr Asp Val Gln Lys Ala Ala
 85 90 95
 Asp Phe Tyr Gln Arg Val Leu Asp Asn Phe Gly Asp Asp Ser Val Gly
 100 105 110
 Glu Leu Gly Gly Ala Pro Gly Tyr Gly Lys Cys Leu Tyr Phe Gly Cys
 115 120 125
 <210>796
 <211>431
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>796
 Glu Ser Leu Ala Glu His Leu Ala Met Glu Asn Val Ser Ile Leu Ala
 1 5 10 15
 Ala Lys Val Leu Glu Asp Ala Arg Ile Gly Gly Ser Pro Leu Glu Lys
 20 25 30
 Ser Thr Arg Tyr Val Tyr Phe Asp Gln Lys Val Arg Gly Glu Tyr Leu
 35 40 45
 Tyr Tyr Arg Asp Pro Ile Leu Met Thr Ser Ala Phe Lys Asp Met Phe
 50 55 60
 Leu Gly Thr Cys Asp Phe Leu Phe Asp Thr Tyr Ser Ala Leu Ile Pro
 65 70 75 80
 Gln Val Arg Ala Tyr Phe Glu Lys Leu Tyr Pro Lys Asp Ser Lys Thr
 85 90 95
 Pro Ala Ser Ala Tyr Ala Thr Ser Leu Arg Ala Lys Val Leu Asp Cys
 100 105 110
 Ile Arg Gly Leu Leu Pro Ala Ala Thr Leu Thr Asn Leu Gly Phe Phe
 115 120 125
 Gly Asn Gly Arg Phe Trp Gln Asn Leu Ile His Lys Leu Gln Gly His
 130 135 140
 Asn Leu Ala Glu Leu Arg Arg Leu Gly Asp Glu Ser Leu Thr Glu Leu
 145 150 155 160
 Met Lys Val Ile Pro Ser Phe Val Ser Arg Ala Glu Pro His His His
 165 170 175
 His His Gln Ala Met Met Gln Tyr Arg Arg Ala Leu Lys Glu Gln Leu
 180 185 190
 Lys Gly Leu Ala Glu Gln Ala Thr Phe Ser Glu Glu Met Ser Ser Ser
 195 200 205
 Pro Ser Val Gln Leu Val Tyr Gly Asp Pro Asp Gly Ile Tyr Lys Val
 210 215 220
 Ala Ala Gly Phe Leu Phe Pro Tyr Ser Asn Arg Ser Leu Thr Asp Leu
 225 230 235 240
 Ile Asp Tyr Cys Lys Lys Met Pro His Glu Asp Leu Val Gln Ile Leu
 245 250 255
 Glu Ser Ser Val Ser Ala Arg Glu Asn Arg Arg His Lys Ser Pro Arg
 260 265 270
 Gly Leu Glu Cys Val Glu Phe Gly Phe Asp Ile Leu Ala Asp Phe Gly
 275 280 285
 Ala Tyr Arg Asp Leu Gln Arg His Arg Thr Leu Thr Gln Glu Arg Gln
 290 295 300
 Leu Leu Ser Thr His His Gly Tyr Asn Phe Pro Val Glu Leu Leu Asp
 305 310 315 320
 Thr Pro Met Glu Lys Ser Tyr Arg Glu Ala Met Glu Arg Ala Asn Glu
 325 330 335
 Thr Tyr Asn Glu Ile Val Gln Glu Phe Pro Glu Glu Ala Gln Tyr Met
 340 345 350
 Val Pro Met Ala Tyr Asn Ile Arg Trp Phe Phe His Val Asn Ala Arg
 355 360 365
 Ala Leu Gln Trp Ile Cys Glu Leu Arg Ser Gln Pro Gln Gly His Gln
 370 375 380
 Asn Tyr Arg Thr Ile Ala Thr Gly Leu Val Arg Glu Val Val Lys Phe
 385 390 395 400
 Asn Pro Met Tyr Glu Leu Phe Phe Lys Phe Val Asp Tyr Ser Asp Ile
 405 410 415

Asp Leu Gly Arg Leu Asn Gln Glu Met Arg Lys Glu Pro Thr Thr
 420 425 430
 <210>797
 <211>292
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>797
 Gly Thr Leu Val Leu His Ala Leu Asp Thr Tyr Arg Pro Ser Ile Glu
 1 5 10 15
 Ser Ala Ile Glu Lys Ala Leu Glu Gly Phe Gly Pro Ile Gly His Pro
 20 25 30
 Ile Arg Ser Pro Val Glu Tyr Ala Leu Gln Gly Gly Gly Lys Arg Leu
 35 40 45
 Arg Pro Gly Leu Val Cys Met Met Ala Gln Gly Leu Gly Leu Asn His
 50 55 60
 Asp Val Met Asp Ser Ala Leu Ala Val Glu Phe Val His Thr Ser Thr
 65 70 75 80
 Leu Ile Ala Asp Asp Leu Pro Cys Met Asp Asn Asp Asp Glu Arg Arg
 85 90 95
 Gly Arg Pro Thr Val His Lys Ala Phe Asp Glu Ala Thr Ala Leu Leu
 100 105 110
 Ala Ser Tyr Ala Leu Ile Pro Ala Tyr Ser His Leu Arg Leu Asn
 115 120 125
 Ala Lys Lys Leu Lys Glu Gln Gly Cys Asp Pro Arg Glu Ile Asp Ile
 130 135 140
 Ala Tyr Asn Ile Ile Gly Asp Ile Thr Asp Lys Asn Ile Gly Cys Ser
 145 150 155 160
 Gly Val Leu Gly Gly Gln Tyr Asp Asp Met Phe Phe Ser Asn Arg Gly
 165 170 175
 Gln Glu His Val Gln Ser Ile Met Ile Lys Lys Thr Gly Ser Leu Phe
 180 185 190
 Glu Ile Ala Cys Ile Ser Gly Trp Leu Phe Gly Gly Gly Asp Pro Gln
 195 200 205
 Phe Ala Pro Ile Ile Thr Ser Phe Ser Asn Asn Phe Gly Leu Leu Phe
 210 215 220
 Gln Ile Lys Asp Asp Phe Ser Asp Leu Gln Lys Asp Ser Gln Gln Ile
 225 230 235 240
 Gly Leu Asn Tyr Ala Leu Leu Phe Gly Glu Lys Ala Ala Leu Glu Leu
 245 250 255
 Leu Ala Arg Ser Gln Asn Asn Cys Leu Glu Leu Leu Asp Arg Leu Ser
 260 265 270
 Ala Gly Gly Leu Lys Asn Ser Ser Glu Phe Glu Thr Ile Ile Ser Ser
 275 280 285
 Leu Gly Ser Phe
 290
 <210>798
 <211>208
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>798
 Met Thr Tyr Leu Ala Ser Ser Ile Phe Ser Pro Glu Asp Phe Leu Tyr
 1 5 10 15
 Pro Glu Ile Ile Ser Lys Ala His Tyr Thr Trp Asp Ile Leu Asp Leu
 20 25 30
 Met Asp Gln Met Leu Glu Asn His Val Phe Ser Gly Ile His Gly Thr
 35 40 45
 Val Glu Ser Gly Val Thr Leu Lys Asn Ile Glu Lys Ile Glu Ile Ala
 50 55 60
 Glu Asp Ala Tyr Val Glu Ser Gly Ala Tyr Ile Val Gly Pro Cys Ile
 65 70 75 80
 Leu Gly Ser Gln Thr Glu Val Arg His Gly Ala Tyr Leu Arg Gly Asn
 85 90 95
 Val Ile Thr Gly Ser Arg Cys Val Val Gly His Cys Thr Glu Ile Lys
 100 105 110

Asn Ser Tyr Leu Gly His His Thr Lys Ala Ala His Phe Ala Tyr Leu
 115 120 125
 Gly Asp Ser Val Leu Ser Ser Glu Val Asn Leu Gly Ala Gly Val Arg
 130 135 140
 Cys Ala Asn Phe Arg Leu Asp Gly Arg Asn Ile Tyr Val Arg Ser Thr
 145 150 155 160
 Ser Asp Lys Ser Lys Lys Ile Asp Thr Gly Arg Arg Lys Leu Gly Ala
 165 170 175
 Phe Leu Gly Lys Gly Val Ala Ile Gly Cys Asn Val Val Ile Asn Pro
 180 185 190
 Gly Gln His Ile Leu Pro His Thr Arg Ile Arg Pro Gly Gln Val Ile
 195 200 205

<210>799

<211>241

<212>PRT

<213>Chlamydia pneumoniae

<400>799

Asn Leu Phe Cys Phe His Met Ile Gly Asp Lys Ile Ile Leu Phe Val
 1 5 10 15
 Thr Glu Asp Leu Ser Leu Ser Ser Gln Leu Lys Asp Leu Ala Ser Gln
 20 25 30
 Arg Ser Asp Tyr Gln Ile Leu Val Ser Pro Val Phe Pro Thr Ser Phe
 35 40 45
 Glu Ser Val Ala Ile Phe Cys Glu Tyr Leu Leu Leu Pro Glu Gln Ile
 50 55 60
 Phe Ser Pro Gly Ile Phe Pro Glu Glu Asp Leu Ile Val Leu Phe Asp
 65 70 75 80
 Thr Phe Gln Glu Glu Ala Ile Thr Lys Val Leu Asn Gln Gly Ala Thr
 85 90 95
 Gly Tyr Leu Leu Arg Pro Ile Thr Ala Lys Val Leu Asp Ala Val Ile
 100 105 110
 Arg Ala Phe Leu Arg Gln His Glu Val Leu Glu His Ser Ile Pro Asp
 115 120 125
 Thr Met Thr Phe Gly Asp His Thr Phe Arg Val Leu Asn Leu Val Ile
 130 135 140
 Glu Ser Pro Glu Gly Ser Val Tyr Leu Thr Pro Ser Glu Ala Gly Ile
 145 150 155 160
 Leu Lys Lys Leu Leu Ile Asn Arg Gly His Leu Cys Leu Arg Lys Asn
 165 170 175
 Leu Leu Ala Glu Ile Lys Gly Asn Thr Lys Glu Ile Ile Ala Arg Asn
 180 185 190
 Val Asp Val His Ile Ala Ser Leu Arg Lys Lys Leu Gly Pro Tyr Gly
 195 200 205
 Ser Lys Ile Val Thr Ile Arg Gly Val Gly Tyr Leu Phe Ser Asp Ala
 210 215 220
 Asp Ser Ile Pro Leu Gln Asn His Asp Asn Thr Ala His Pro Ile Glu
 225 230 235 240
 Glu

<210>800

<211>609

<212>PRT

<213>Chlamydia pneumoniae

<400>800

Met Phe Arg Cys Ile Leu Phe Gly Ile Phe Leu Leu Thr Cys Phe Ser
 1 5 10 15
 Ser Gly Gly Val Leu Tyr Tyr Leu Phe Cys Ser His Asp Phe Ser Ile
 20 25 30
 Gly Pro Lys Glu Lys Ser Arg Ser Val Trp Ile Glu Glu Glu Lys Glu
 35 40 45
 Phe Thr Asp Ser Val Leu His His Leu Pro Ser Gln His Gln His Leu
 50 55 60
 His Ile Leu Cys Phe Gln Gly Phe Leu Leu Gln Lys Gln Gln Lys Phe
 65 70 75 80

Ser Gln Ala Glu Lys Ile Phe Ser Lys Val Tyr Asp Glu Ala Gln Asp
 85 90 95
 Gly Pro Phe Leu Phe Lys Glu Glu Ile Leu Gly Ser Arg Leu Ile Asn
 100 105 110
 Ser Phe Phe Leu Glu Lys Thr Asp Val Met Glu Thr Ile Leu Cys Leu
 115 120 125
 Leu Asn Gln Arg Cys Pro Asn Ser Pro Tyr Tyr His Leu Phe Lys Ala
 130 135 140
 Leu Val Cys Tyr Lys Gln Lys Leu Tyr Arg Glu Val Ile Glu Gln Leu
 145 150 155 160
 Ala Tyr Trp Gln Glu Glu Lys Thr Arg Ala Leu Ala Pro Leu Leu Asn
 165 170 175
 Ile Ser Ile Glu Gln Leu Leu Thr Asp Phe Leu Leu Asp Tyr Ile Ser
 180 185 190
 Ala His Ser Leu Ile Glu Gln Lys Met Phe Pro Glu Gly Arg Val Ile
 195 200 205
 Leu Asn Arg Asn Ile Asn Arg Leu Leu Lys His Glu Cys Glu Trp Asn
 210 215 220
 Ala Lys Thr Tyr Asp Arg Ile Ala Ile Leu Leu Ser Arg Ser Tyr Phe
 225 230 235 240
 Leu Glu Leu Val Glu Ser Lys Ser Ala Asp Ile Tyr Phe Asp Tyr Tyr
 245 250 255
 Glu Met Val Leu Phe Tyr Leu Lys Lys Ile Tyr Ile Leu Glu Gln Cys
 260 265 270
 Pro Tyr Ala Glu Leu Leu Pro Glu Glu Glu Leu Val Ser Leu Ile Met
 275 280 285
 Glu His Val Phe Ile Leu Pro Lys Asp Lys Leu Tyr Pro Leu Ile Gln
 290 295 300
 Leu Leu Glu Met Trp Gln Lys His Tyr Val His Pro Asn Ser Ser Leu
 305 310 315 320
 Val Val Gln Ile Leu Val Asp Arg Phe Ser Thr His Met Glu Gly Ala
 325 330 335
 Ile Arg Phe Cys Glu Ala Leu Val Ser Phe Ser Gly Leu Glu Glu Leu
 340 345 350
 His Gln Gln Ile Ile Thr Thr Phe Glu Glu Leu Leu Ser Asn Lys Val
 355 360 365
 Gln Gln Ile Lys Thr Glu Glu Ala Lys Gln Cys Val Ala Leu Leu His
 370 375 380
 Ile Leu Asp Pro Ser Ile Ser Ile Ser Glu Lys Leu Ala Leu Ser Ser
 385 390 395 400
 Asp Thr Leu Gln Asn Ile Val Ser Gly Asp Asp Glu Gln His Thr Lys
 405 410 415
 Leu Arg Asn Tyr Leu Asp Leu Trp Glu Ala Ile Gln Ser Tyr Asp Ile
 420 425 430
 Asp Arg Gln Gln Leu Val His His Leu Val Tyr Gly Ala Lys Asp Leu
 435 440 445
 Trp Lys Lys Gly Gly Ser Asp Glu Lys Ala Leu Asn Leu Leu Gln Leu
 450 455 460
 Val Leu Arg Phe Thr Ser Tyr Asp Ile Glu Cys Glu Ser Val Val Phe
 465 470 475 480
 Leu Phe Ile Lys Gln Ala Tyr Lys Gln Ala Leu Ser Ser His Ala Ile
 485 490 495
 Ala Arg Leu Leu Lys Leu Glu Lys Phe Ile Ser Glu Ala Asn Ile Pro
 500 505 510
 Ser Ile Val Ile Ser Glu Ala Glu Lys Ala Asn Phe Leu Ala Asp Ala
 515 520 525
 Glu Tyr Leu Phe Ala His Glu Asp Tyr Asp Lys Cys Tyr Leu Tyr Ser
 530 535 540
 Met Trp Leu Thr Lys Val Ala Pro Ser Pro Gln Ser Tyr Arg Leu Ala
 545 550 555 560
 Gly Leu Cys Leu Met Glu Asn Lys Arg Tyr Asp Glu Ala Leu Glu Phe
 565 570 575
 Leu Cys Met Leu Ser Pro Asn Asp Ser Ile Asn Asp Tyr Lys Thr Gln
 580 585 590

Lys Ala Leu Ala Phe Cys Gln Lys His Gln Ser Lys Asp Arg Ala Ala
 595 600 605
 Ser

<210>801

<211>295

<212>PRT

<213>Chlamydia pneumoniae

<400>801

Gly Trp Ala Leu His Thr Glu Phe Ala Pro Phe Leu Glu Asp Leu Val
 1 5 10 15
 His Gln Gln Val Ile Ser Pro Leu Asp Ile Ala Phe Ala Ser Lys His
 20 25 30
 Ile Ser Ser Asp Phe Glu Glu Ser Phe Val Phe Leu Ala Val Ser Ser
 35 40 45
 Ala Leu Trp Arg Tyr Gly His Pro Phe Leu Ser Leu Glu Glu Asn Arg
 50 55 60
 Ile Arg Pro Ser Leu Gly Gly Ile Ser Glu Thr Asp Leu Tyr Arg Gly
 65 70 75 80
 Phe His Asn Leu Pro Lys Glu Val Arg Asp Lys Leu Phe Val Val Val
 85 90 95
 Ser Gly Arg Leu Tyr Leu Arg Ser Leu Tyr Thr Ile Arg Ser Lys Leu
 100 105 110
 Leu Asp Lys Leu Ser Leu Leu Cys Ser Ala Thr Pro Asn Tyr Phe Pro
 115 120 125
 Pro Ser Ile Asp Ser Ser Ile Leu Ser Glu Glu Gln Asn Phe Ile Phe
 130 135 140
 Asn Lys Ile Thr Gln Gly Cys Phe Ser Ile Val Ser Gly Gly Pro Gly
 145 150 155 160
 Thr Gly Lys Thr Phe Leu Ala Ala Gln Leu Ile Leu Ser Leu Val Lys
 165 170 175
 Gln Gln Pro Lys Leu Arg Ile Ala Ile Val Ser Pro Thr Gly Lys Ala
 180 185 190
 Thr Ser His Ile Arg Gln Ile Leu Met Lys Tyr Asn Ile Phe Asp Asp
 195 200 205
 Met Val Leu Met Gln Thr Val His His Phe Leu Gln Glu Tyr Ala Tyr
 210 215 220
 Arg Arg Tyr Asn Ser Ile Asp Val Leu Leu Val Asp Glu Gly Ser Met
 225 230 235 240
 Val Thr Phe Asp Leu Leu Tyr Ser Leu Val Gln Thr Leu Gln Gly Tyr
 245 250 255
 Glu Lys Asp Lys Lys Leu Tyr Thr Ser Ser Leu Ile Ile Leu Gly Asp
 260 265 270
 Thr Asn Gln Leu Pro Pro Ile Gly Ile Gly Val Gly Asn Pro Leu Gln
 275 280 285
 Asp Leu Ile Gly Tyr Phe Pro
 290 295

<210>802

<211>205

<212>PRT

<213>Chlamydia pneumoniae

<400>802

Asp Ile Ser His Glu Asn Thr Phe Phe Leu Lys Thr Ser His Arg Ala
 1 5 10 15
 Lys Thr Gly Val Val Asp Gln Leu Thr Gln Ser Val Leu Arg Gly Glu
 20 25 30
 Met Ile Ser Phe Ser Pro Leu Pro Ser Ile Ser Ser Ala Ile Glu Val
 35 40 45
 Leu Lys Asn Arg Phe Val Lys Ser Leu Arg Gln Ser Glu Ala Arg Leu
 50 55 60
 Cys Val Leu Thr Pro Met Arg His Gly Pro Trp Gly Val Leu Asn Leu
 65 70 75 80
 Asn Thr Met Ile His Gln Arg Leu Ala Arg Ser Asp Pro Asp Leu Arg
 85 90 95

```

Ile Pro Ile Met Val Thr Ser Arg Tyr Glu Thr Trp Gly Leu Phe Asn
      100      105      110
Gly Asp Thr Gly Leu Leu Cys Leu Lys Thr Gln Lys Leu His Phe Pro
      115      120      125
Gln His Glu Pro Ile Asp Ser Arg Ala Leu Ser Gln Tyr Val Tyr Asn
      130      135      140
Tyr Val Met Ser Val His Lys Ser Gln Gly Ser Glu Tyr Asp Glu Val
145      150      155      160
Ile Val Ile Ile Pro Lys Gly Ser Glu Val Phe Gly Val Ser Ile Leu
      165      170      175
Tyr Thr Ala Ile Thr Arg Ala Lys Tyr Arg Val Ser Val Trp Arg Asp
      180      185      190
Pro Glu Thr Leu His Lys Thr Ile Lys Lys Ser Asn Tyr
      195      200      205

```

<210>803

<211>283

<212>PRT

<213>Chlamydia pneumoniae

<400>803

```

Ile Met Ala Thr Ala His Leu Gly Arg Gln Ala Leu Leu His Leu Arg
  1      5      10      15
Ser Trp Thr Pro Ala Ile Arg Ala Ser Gly Asn Leu Phe Arg Gln Gln
      20      25      30
Ser Met Ser Leu His Asn Asn Val Leu Phe Ala Gly Asp Ile Val Gly
      35      40      45
Ala Ile Lys Asn Ser Thr Ala Ile Ser Arg His Ala Leu Gly Ser Ser
      50      55      60
His Tyr Ala His Ala Ala Leu Gln Lys Thr Glu Gly Phe Leu Gly Ala
      65      70      75      80
Ala Asp Gly Val Asn Thr Ala Val Ala Gly Ala Met Leu Trp Gly Gln
      85      90      95
Leu Leu Asn Gly Ser Met Ile Phe Glu Thr Asp Glu Glu Thr Gly Glu
      100      105      110
Leu Arg Arg Cys Asn Glu Ala Asp Ala Glu Gly Cys Met Thr Gln Lys
      115      120      125
Leu Gln Arg Arg Ser Ala Leu Thr Ile Thr Gly Lys Val Ala Arg Leu
      130      135      140
Ala Ser Lys Thr Leu Gly Thr Ala Thr Phe Leu His Glu Met Asp Val
145      150      155      160
Val Ser Leu Gly Ala Asn Ala Asn Lys Ile Gly Cys Lys Val Thr Ser
      165      170      175
Cys Leu Asn Leu Val Ala Thr Gly Cys Ser Leu Thr Glu Ser Ser Ile
      180      185      190
Ser Leu Tyr Arg Ile Leu Ser Thr Arg Pro Glu Thr Ile Ser Asp Pro
      195      200      205
Glu Asn Arg Asn Lys Pro Ser Ala Glu Phe Ala Ala Arg Ser Lys Ala
      210      215      220
Ile Arg Asn Ala Phe Ile Ala Trp Leu Gly Asp Val Val Asp Leu Val
225      230      235      240
Cys Asp Ala Leu Gly Thr Leu Ser Leu Phe Leu Pro Ala Ile Leu Gly
      245      250      255
Val His Ala Val Leu Ile Met Ala Ile Leu Gly Leu Ile Ser Cys Val
      260      265      270
Ile Asn Phe Val Lys Asp Tyr Ala Lys Ile Gly
      275      280

```

<210>804

<211>88

<212>PRT

<213>Chlamydia pneumoniae

<400>804

```

Tyr Thr Lys Lys Thr Ser Ala Glu Lys Arg Ile Leu Thr Ala Gln Lys
  1      5      10      15
Arg Glu Leu Ile Asn His Ser Phe Lys Ser Lys Val Lys Thr Ile Val
      20      25      30

```

Lys Lys Phe Glu Ala Ser Leu Lys Leu Asp Asp Thr Gln Ala Thr Leu
35 40 45
Ser Asn Leu Gln Ser Val Tyr Ser Val Val Asp Lys Ala Val Lys Arg
50 55 60
Gly Ile Phe Lys Asp Asn Lys Ala Ala Arg Ile Lys Ser Lys Ala Thr
65 70 75 80
Leu Lys Val Asn Ala Arg Ala Ser
85
<210>805
<211>407
<212>PRT
<213>Chlamydia pneumoniae
<400>805
Tyr Lys Asp Leu Phe Phe Met Leu Leu Val Arg Lys Trp Leu His Thr
1 5 10 15
Cys Phe Lys Tyr Trp Ile Tyr Phe Leu Pro Val Val Thr Leu Leu Leu
20 25 30
Pro Leu Val Cys Tyr Pro Phe Leu Ser Ile Ser Gln Lys Ile Tyr Gly
35 40 45
Tyr Phe Val Phe Thr Thr Ile Ser Ser Leu Gly Trp Phe Phe Ala Leu
50 55 60
Arg Arg Arg Glu Asn Gln Leu Lys Thr Ala Ala Val Gln Leu Leu Gln
65 70 75 80
Thr Lys Ile Arg Lys Leu Thr Glu Asn Asn Glu Gly Leu Arg Gln Ile
85 90 95
Arg Glu Ser Leu Lys Glu His Gln Gln Glu Ser Ala Gln Leu Gln Ile
100 105 110
Gln Ser Gln Lys Leu Lys Asn Ser Leu Phe His Leu Gln Gly Leu Leu
115 120 125
Val Lys Thr Lys Gly Glu Gly Gln Lys Leu Glu Thr Leu Leu Leu His
130 135 140
Arg Thr Glu Glu Asn Arg Cys Leu Lys Met Gln Val Asp Ser Leu Ile
145 150 155 160
Gln Glu Cys Gly Glu Lys Thr Glu Glu Val Gln Thr Leu Asn Arg Glu
165 170 175
Leu Ala Glu Thr Leu Ala Tyr Gln Gln Ala Leu Asn Asp Glu Tyr Gln
180 185 190
Ala Thr Phe Ser Glu Gln Arg Asn Met Leu Asp Lys Arg Gln Ile Tyr
195 200 205
Ile Gly Lys Leu Glu Asn Lys Val Gln Asp Leu Met Tyr Glu Ile Arg
210 215 220
Asn Leu Leu Gln Leu Glu Ser Asp Ile Ala Glu Asn Ile Pro Ser Gln
225 230 235 240
Glu Ser Asn Ala Val Thr Gly Asn Ile Ser Leu Gln Leu Ser Ser Glu
245 250 255
Leu Lys Lys Ile Ala Phe Lys Ala Glu Asn Ile Glu Ala Ala Ser Ser
260 265 270
Leu Thr Ala Ser Arg Tyr Leu His Thr Asp Thr Ser Val His Asn Tyr
275 280 285
Ser Leu Glu Cys Arg Gln Leu Phe Asp Ser Leu Arg Glu Glu Asn Leu
290 295 300
Gly Met Leu Phe Val Tyr Ala Arg Gln Ser Gln Arg Ala Val Phe Ala
305 310 315 320
Asn Ala Leu Phe Lys Thr Trp Thr Gly Tyr Cys Ala Glu Asp Phe Leu
325 330 335
Lys Phe Gly Ser Asp Ile Val Ile Ser Gly Gly Lys Gln Trp Met Glu
340 345 350
Asp Leu His Ser Ser Arg Glu Glu Cys Ser Gly Arg Leu Val Ile Lys
355 360 365
Thr Lys Ser Arg Gly His Leu Pro Phe Arg Tyr Cys Leu Met Ala Leu
370 375 380
Asn Lys Gly Pro Leu Cys Tyr His Val Leu Gly Val Leu Tyr Pro Leu
385 390 395 400
His Lys Glu Val Leu Gln Ser

405

<210>806

<211>591

<212>PRT

<213>Chlamydia pneumoniae

<400>806

Leu Thr Lys Leu Ser Ser Lys Ala Arg Asn Pro Leu Val Leu Phe Gln
1 5 10 15
Val Arg Lys Leu Phe Met Asn Thr Gln Asn Ser Gln Ala Thr Glu Val
20 25 30
Ser Ser Glu Glu Glu Ser Gln Lys Lys Leu Glu Glu Leu Val Ala Leu
35 40 45
Ala Lys Glu Gln Gly Phe Ile Thr Tyr Glu Glu Ile Asn Glu Ile Leu
50 55 60
Pro Met Ser Phe Asp Thr Pro Glu Gln Ile Asp Gln Val Leu Ile Phe
65 70 75 80
Leu Thr Gly Met Asp Ile Gln Val Leu Asn Gln Ile Asp Val Glu Arg
85 90 95
Gln Lys Glu Lys Lys Lys Glu Ala Lys Glu Leu Glu Gly Leu Ala Arg
100 105 110
Arg Thr Glu Gly Thr Pro Asp Asp Pro Val Arg Met Tyr Leu Lys Glu
115 120 125
Met Gly Thr Val Pro Leu Leu Thr Arg Glu Glu Glu Val Glu Ile Ser
130 135 140
Lys Arg Ile Glu Lys Ala Gln Val Gln Ile Glu Arg Ile Ile Leu Arg
145 150 155 160
Phe Arg Tyr Ser Ala Lys Glu Ala Ile Ser Ile Ala His Tyr Leu Ile
165 170 175
Ser Gly Lys Glu Arg Phe Asp Lys Ile Ile Ser Glu Lys Glu Val Glu
180 185 190
Asp Lys Thr His Phe Leu Lys Leu Leu Pro Lys Leu Ile Thr Leu Leu
195 200 205
Lys Glu Asp Thr Tyr Leu Glu Asn Leu Leu Ser Leu Lys Gln
210 215 220
Pro Asp Leu Ser Lys Gln Glu Ala Ala Lys Leu Asn Asp Ser Leu Glu
225 230 235 240
Lys Cys Arg Ile Arg Thr Gln Ala Tyr Leu Arg Cys Phe His Cys Arg
245 250 255
His Asn Val Thr Glu Asp Phe Gly Glu Val Val Phe Lys Ala Tyr Asp
260 265 270
Ser Phe Leu His Leu Glu Gln Gln Ile Asn Asp Leu Lys Val Arg Ala
275 280 285
Glu Arg Asn Lys Phe Ala Ala Ala Lys Leu Ala Ala Ala Lys Arg Lys
290 295 300
Leu Tyr Lys Arg Glu Val Ala Ala Gly Arg Thr Leu Glu Glu Phe Lys
305 310 315 320
Lys Asp Val Arg Met Leu Gln Arg Trp Met Asp Lys Ser Gln Glu Ala
325 330 335
Lys Lys Glu Met Val Glu Ser Asn Leu Arg Leu Val Ile Ser Ile Ala
340 345 350
Lys Lys Tyr Thr Asn Arg Gly Leu Ser Phe Leu Asp Leu Ile Gln Glu
355 360 365
Gly Asn Met Gly Leu Met Lys Ala Val Glu Lys Phe Glu Tyr Arg Arg
370 375 380
Gly Tyr Lys Phe Ser Thr Tyr Ala Thr Trp Trp Ile Arg Gln Ala Val
385 390 395 400
Thr Arg Ala Ile Ala Asp Gln Ala Arg Thr Ile Arg Ile Pro Val His
405 410 415
Met Ile Glu Thr Ile Asn Lys Val Leu Arg Gly Ala Lys Lys Leu Met
420 425 430
Met Glu Thr Gly Lys Glu Pro Thr Pro Glu Glu Leu Ala Glu Glu Leu
435 440 445
Gly Leu Thr Pro Asp Arg Val Arg Glu Ile Tyr Lys Ile Ala Gln His
450 455 460

Pro Ile Ser Leu Gln Ala Glu Val Gly Glu Gly Ser Glu Ser Ser Phe
 465 470 475 480
 Gly Asp Phe Leu Glu Asp Thr Ala Val Glu Ser Pro Ala Glu Ala Thr
 485 490 495
 Gly Tyr Ser Met Leu Lys Asp Lys Met Lys Glu Val Leu Lys Thr Leu
 500 505 510
 Thr Asp Arg Glu Arg Phe Val Leu Ile His Arg Phe Gly Leu Leu Asp
 515 520 525
 Gly Lys Pro Lys Thr Leu Glu Glu Val Gly Ser Ala Phe Asn Val Thr
 530 535 540
 Arg Glu Arg Ile Arg Gln Ile Glu Ala Lys Ala Leu Arg Lys Met Arg
 545 550 555 560
 His Pro Ile Arg Ser Lys Gln Leu Arg Ala Phe Leu Asp Leu Leu Glu
 565 570 575
 Glu Glu Lys Thr Gly Thr Ser Lys Val Lys Ser Leu Lys Ser Lys
 580 585 590

<210>807

<211>142

<212>PRT

<213>Chlamydia pneumoniae

<400>807

Pro Cys Ile Lys Asn Ile Ala Leu Val Ile Ala Ile Glu Arg Tyr Gln
 1 5 10 15
 Leu Ile Ile Ser Lys Phe Arg Met Trp Leu Phe Leu Gly Cys Ser Val
 20 25 30
 Glu Glu Arg His Phe Lys Gln Pro Val Leu Ile Ser Val Thr Phe Ser
 35 40 45
 Tyr Asn Glu Val Pro Ser Ala Cys Leu Ser Asp Lys Leu Ser Asp Ala
 50 55 60
 Cys Cys Tyr Leu Glu Val Thr Ser Leu Ile Glu Glu Ile Ala Asn Thr
 65 70 75 80
 Lys Pro Tyr Ala Leu Ile Glu His Leu Ala Asn Glu Leu Phe Asp Ser
 85 90 95
 Leu Val Ile Ser Phe Gly Asp Lys Ala Ser Lys Ile Asp Leu Glu Val
 100 105 110
 Glu Lys Glu Arg Pro Pro Val Pro Asn Leu Leu Asn Pro Ile Lys Phe
 115 120 125
 Thr Ile Ser Lys Glu Leu Cys Pro Ser Pro Val Leu Ser Ala
 130 135 140

<210>808

<211>452

<212>PRT

<213>Chlamydia pneumoniae

<400>808

Arg Ala Met Ser Glu Pro Arg Phe Val Cys Leu Ser Leu Gly Ser Asn
 1 5 10 15
 Leu Gly Asn Arg Phe Lys Asn Leu Gln Ile Ala Arg Thr Leu Leu Gly
 20 25 30
 Glu Gln Ala Val Leu Gly Leu Arg Ser Ser Val Ile Leu Glu Thr Glu
 35 40 45
 Ala Leu Leu Leu Pro Gly Ser Pro Pro Glu Trp Asp Leu Pro Tyr Phe
 50 55 60
 Asn Ser Val Leu Val Gly Glu Thr Thr Leu Ser Leu Arg Glu Leu Leu
 65 70 75 80
 Val Thr Ile Lys Gln Ile Glu Lys Val Val Gly Arg Ala Glu Glu Ser
 85 90 95
 Pro Pro Trp Ser Pro Arg Thr Ile Asp Val Asp Ile Leu Leu Tyr Gly
 100 105 110
 Asp Glu Ser Phe Cys Cys Asp His Thr Glu Ile Thr Ile Pro Leu Ser
 115 120 125
 Asn Leu Leu Ser Arg Pro Phe Leu Ile Ala Leu Ile Ala Ser Leu Cys
 130 135 140
 Pro Tyr Arg Arg Phe Cys Thr Gln Gly Ser Pro Tyr His Asn Phe Thr
 145 150 155 160

Phe Gly Glu Leu Ala His His Leu Pro Ser Pro Pro Gly Met Ile Arg
 165 170 175
 Arg Ser Leu Ser Pro Asp Thr Met Leu Met Gly Val Val Asn Val Thr
 180 185 190
 Asn Asp Ser Met Ser Asp Gly Gly Met Phe Leu Asp Pro Glu Lys Ala
 195 200 205
 Val Ala Gln Ala Glu Lys Leu Phe Thr Glu Gly Ala Ala Val Ile Asp
 210 215 220
 Phe Gly Ala Gln Ala Thr Asn Pro Lys Val Lys Gln Phe Leu Ser Val
 225 230 235 240
 Asp Gln Glu Trp Glu Arg Leu Glu Pro Val Leu Arg Leu Leu Lys Glu
 245 250 255
 Thr Trp Ser Asn Arg Lys Gln Tyr Pro Ile Ile Ser Leu Asp Thr Phe
 260 265 270
 Tyr Pro Glu Ile Ile Leu Arg Ala Met Asp Ile Tyr Pro Ile Gln Trp
 275 280 285
 Ile Asn Asp Val Ser Gly Gly Ser Gln Ser Met Ala Glu Val Ala Arg
 290 295 300
 Asp Cys Glu Leu Ser Leu Val Met Asn His Ser Ser Ser Leu Pro Val
 305 310 315 320
 Asp Pro Lys Asn Ile Leu Ser Phe Ser Val Pro Ile Gly Glu Gln Leu
 325 330 335
 Leu Ser Trp Gly Glu Lys Gln Leu Lys Met Phe Ser Asp Val Gly Leu
 340 345 350
 Asn Ala Asn Gln Val Ile Phe Asp Pro Gly Ile Gly Phe Gly Lys Gly
 355 360 365
 Ala Ala Gln Ser Leu Ala Thr Leu Tyr Glu Ile Ala Lys Phe Lys Arg
 370 375 380
 Leu Gly Cys Pro Ile Leu Ile Gly His Ser Arg Lys Ser Phe Leu Ser
 385 390 395 400
 Leu Phe Gly Asn His Asp Pro Lys Asp Arg Asp Trp Glu Thr Val Gly
 405 410 415
 Leu Ser Ile Leu Leu Gln Gln Gln Gly Val Asp Tyr Leu Arg Val His
 420 425 430
 Asn Val Ala Ala His Gln Lys Ala Leu Ser Val Ala Ala Cys Glu Ala
 435 440 445
 Cys Ala Pro Ile
 450

<210>809

<211>186

<212>PRT

<213>Chlamydia pneumoniae

<400>809

Val Lys Pro Val His Pro Ser Asn Phe Glu Asn Pro Leu Gly Val Glu
 1 5 10 15
 Met Cys Lys Asn Arg Gly Val Arg Gly Ile Val Ala Cys Asp Pro Arg
 20 25 30
 Gly Val Ile Gly Leu Glu Gly Lys Leu Pro Trp His Tyr Pro Glu Asp
 35 40 45
 Leu Gln Phe Phe Ser Glu Thr Ile Gln Lys Phe Pro Ile Val Met Gly
 50 55 60
 Arg Lys Thr Trp Glu Thr Leu Pro Arg Lys Tyr Phe Val Asp Arg Ala
 65 70 75 80
 Val Val Val Phe Ser His Glu Lys Arg Gln Gly Val His Gly Glu Ile
 85 90 95
 Trp Val Thr Ser Leu Glu Glu Phe Leu Leu Leu Asp Leu Ser Ser Pro
 100 105 110
 Thr Phe Leu Ile Gly Gly Gly Glu Leu Tyr Ser Leu Phe Leu Glu Asn
 115 120 125
 Gln Ile Val Arg Asp Phe Phe Ile Ser His Ile Lys Lys Glu Tyr Ala
 130 135 140
 Gly Asp Thr Phe Phe Pro Leu Ser Leu Leu Glu Thr Trp Thr Lys Thr
 145 150 155 160
 Val Leu Arg Asp Thr Gln Lys Ile Thr Thr Cys Tyr Tyr Glu Asn His

165 170 175
 His Ser Gln Asn Thr Lys Asn Ile Ser Leu
 180 185
 <210>810
 <211>264
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>810
 Arg His Gly Pro Lys Leu Cys Leu Glu Ile Pro Lys Arg Ser Gln Arg
 1 5 10 15
 Val Thr Met Lys Ile Thr Thr Val Lys Thr Pro Lys Ile Tyr Pro Tyr
 20 25 30
 Asp Asp Leu Tyr Ser Ile Leu Glu Ser Ser Leu Pro Lys Leu Asn Glu
 35 40 45
 Arg Ser Ile Val Val Ile Thr Ser Lys Ile Val Ser Leu Cys Glu Gly
 50 55 60
 Ala Val Val Glu Leu Glu Lys Val Ser Lys Asp Glu Leu Ile Lys Gln
 65 70 75 80
 Glu Ala Asp Ala Tyr Val Phe Val Glu Lys Tyr Gly Ile Tyr Leu Thr
 85 90 95
 Lys Lys Trp Gly Ile Leu Ile Pro Ser Ala Gly Ile Asp Glu Ser Asn
 100 105 110
 Val Glu Gly Tyr Phe Val Leu Tyr Pro Arg Asp Val Leu Leu Ser Val
 115 120 125
 Asn Thr Leu Gly Asp Trp Leu Arg Asn Phe Tyr His Leu Glu His Cys
 130 135 140
 Gly Ile Ile Ile Ser Asp Ser His Thr Thr Pro Leu Arg Arg Gly Thr
 145 150 155 160
 Met Gly Leu Gly Leu Cys Trp Asn Gly Phe Phe Pro Leu Tyr Asn Tyr
 165 170 175
 Val Gly Lys Pro Asp Cys Phe Gly Arg Ala Leu Lys Met Thr Tyr Ser
 180 185 190
 Asn Leu Leu Asp Gly Leu Ser Ala Ala Val Leu Cys Met Gly Glu
 195 200 205
 Gly Asp Glu Gln Thr Pro Ile Ala Ile Ile Glu Glu Ala Pro Lys Ile
 210 215 220
 Thr Phe His Ser Ser Pro Thr Thr Leu Gln Asp Met Ser Thr Leu Ala
 225 230 235 240
 Ile Ala Glu Asp Glu Asp Leu Tyr Gly Pro Leu Leu Gln Ser Met Ala
 245 250 255
 Trp Glu Thr Pro Ala Pro Thr Ser
 260

<210>811
 <211>226
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>811
 Gly Ile Met Thr Ser Trp Ile Glu Leu Leu Asp Lys Gln Ile Glu Asp
 1 5 10 15
 Gln His Met Leu Lys His Glu Phe Tyr Gln Arg Trp Ser Glu Gly Lys
 20 25 30
 Leu Glu Lys Gln Gln Leu Gln Ala Tyr Ala Lys Asp Tyr Tyr Leu His
 35 40 45
 Ile Lys Ala Phe Pro Cys Tyr Leu Ser Ala Leu His Ala Arg Cys Asp
 50 55 60
 Asp Leu Gln Ile Arg Arg Gln Ile Leu Glu Asn Leu Met Asp Glu Glu
 65 70 75 80
 Ala Gly Asn Pro Asn His Ile Asp Leu Trp Arg Gln Phe Ala Leu Ser
 85 90 95
 Leu Gly Val Ser Glu Glu Glu Leu Ala Asn His Glu Phe Ser Gln Ala
 100 105 110
 Ala Gln Asp Met Val Ala Thr Phe Arg Arg Leu Cys Asp Met Pro Gln
 115 120 125
 Leu Ala Val Gly Leu Gly Ala Leu Tyr Thr Tyr Glu Ile Gln Ile Pro

130 135 140
 Gln Val Cys Val Glu Lys Ile Arg Gly Leu Lys Glu Tyr Phe Gly Val
 145 150 155 160
 Ser Ala Arg Gly Tyr Ala Tyr Phe Thr Val His Gln Glu Ala Asp Ile
 165 170 175
 Lys His Ala Ser Glu Glu Lys Glu Met Leu Gln Thr Leu Val Gly Arg
 180 185 190
 Glu Asn Pro Asp Ala Val Leu Gln Gly Ser Gln Glu Val Leu Asp Thr
 195 200 205
 Leu Trp Asn Phe Leu Ser Ser Phe Ile Asn Ser Thr Glu Pro Cys Ser
 210 215 220
 Cys Lys
 225
 <210>812
 <211>361
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>812
 Met Glu Thr Lys Arg Ser Ile Tyr Met Asn Leu Pro Asp Arg Lys Lys
 1 5 10 15
 Ala Leu Glu Ala Ala Val Ala Tyr Ile Glu Lys Gln Phe Gly Ala Gly
 20 25 30
 Ser Ile Met Ser Leu Gly Arg His Ser Ala Thr His Glu Ile Ser Thr
 35 40 45
 Ile Lys Thr Gly Ala Leu Ser Leu Asp Leu Ala Leu Gly Ile His Gly
 50 55 60
 Val Pro Lys Gly Arg Val Ile Glu Ile Phe Gly Pro Glu Ser Ser Gly
 65 70 75 80
 Lys Thr Thr Leu Ala Thr His Ile Val Ala Asn Ala Gln Lys Met Gly
 85 90 95
 Gly Val Ala Ala Tyr Ile Asp Ala Glu His Ala Leu Asp Pro Ser Tyr
 100 105 110
 Ala Ser Leu Ile Gly Val Asn Ile Asp Asp Leu Met Ile Ser Gln Pro
 115 120 125
 Asp Cys Gly Glu Asp Ala Leu Ser Ile Ala Glu Leu Leu Ala Arg Ser
 130 135 140
 Gly Ala Val Asp Val Ile Val Ile Asp Ser Val Ala Ala Leu Val Pro
 145 150 155 160
 Lys Ser Glu Leu Glu Gly Asp Ile Gly Asp Val His Val Gly Leu Gln
 165 170 175
 Ala Arg Met Met Ser Gln Ala Leu Arg Lys Leu Thr Ala Thr Leu Ser
 180 185 190
 Arg Ser Gln Thr Cys Ala Val Phe Ile Asn Gln Ile Arg Glu Lys Ile
 195 200 205
 Gly Val Ser Phe Gly Asn Pro Glu Thr Thr Thr Gly Gly Arg Ala Leu
 210 215 220
 Lys Phe Tyr Ser Ser Ile Arg Leu Asp Ile Arg Arg Ile Gly Ser Ile
 225 230 235 240
 Lys Gly Ser Asp Asn Ser Asp Ile Gly Asn Arg Ile Lys Val Lys Val
 245 250 255
 Ala Lys Asn Lys Leu Ala Pro Pro Phe Arg Ile Ala Glu Phe Asp Ile
 260 265 270
 Leu Phe Asn Glu Gly Ile Ser Ser Ala Gly Cys Ile Leu Asp Leu Ala
 275 280 285
 Val Glu Tyr Asn Ile Ile Glu Lys Lys Gly Ser Trp Phe Asn Tyr Gln
 290 295 300
 Glu Lys Lys Leu Gly Gln Gly Arg Glu Phe Val Arg Glu Glu Leu Lys
 305 310 315 320
 Arg Asn Arg Lys Leu Phe Glu Glu Ile Glu Lys Arg Ile Tyr Asp Val
 325 330 335
 Ile Ala Ala Asn Lys Thr Pro Ser Val His Ala Asn Glu Thr Pro Gln
 340 345 350
 Glu Val Pro Ala Gln Thr Val Glu Ala
 355 360

<210>813

<211>180

<212>PRT

<213>Chlamydia pneumoniae

<400>813

Met Thr Asp Pro Lys Ile Glu Lys Ser Ala Leu Arg Lys Leu Phe Ile
 1 5 10 15
 Ser Ile Arg Arg Asp Leu Ser Glu Glu Arg Lys His Glu Ala Ser Ser
 20 25 30
 Ala Val Ala Ser Phe Val Arg Ser Phe Ser Lys Glu Ser Val Val Leu
 35 40 45
 Ser Phe Val Ser Phe Asn His Glu Ile Asp Met Gln Glu Ala Asn Arg
 50 55 60
 Ile Leu Ile Gln Lys Cys Thr Leu Ala Leu Pro Lys Ile Asp Gln Glu
 65 70 75 80
 Asn Leu Tyr Pro Val Leu Ile Pro Ser Ile Asp Asp Leu Ile Ser Val
 85 90 95
 Val His Pro Lys Asp Pro Phe Ser Lys Gln Thr Pro Ile Ser Ser Asp
 100 105 110
 Lys Ile Thr His Val Leu Val Pro Gly Leu Ala Phe Asp Gln Gln Gly
 115 120 125
 Tyr Arg Leu Gly Tyr Gly His Gly Phe Tyr Asp Arg Trp Leu Ala Gln
 130 135 140
 His Pro Tyr Pro Ser Ile Arg Thr Ile Gly Ile Gly Tyr Cys Glu Gln
 145 150 155 160
 Lys Ile Asp Arg Leu Pro Gln Glu Ser His Asp Ile Pro Leu Ser Gln
 165 170 175
 Ile Tyr Leu Cys
 180

<210>814

<211>428

<212>PRT

<213>Chlamydia pneumoniae

<400>814

Met Asp Ile Lys Lys Leu Phe Cys Leu Phe Leu Cys Ser Ser Leu Ile
 1 5 10 15
 Ala Met Ser Pro Ile Tyr Gly Lys Thr Gly Asp Tyr Glu Lys Leu Thr
 20 25 30
 Leu Thr Gly Ile Asn Ile Ile Asp Arg Asn Gly Leu Ser Glu Thr Ile
 35 40 45
 Cys Ser Lys Glu Lys Leu Lys Lys Tyr Thr Lys Val Asp Phe Leu Ala
 50 55 60
 Pro Gln Pro Tyr Gln Lys Val Met Arg Met Tyr Lys Asn Lys Arg Gly
 65 70 75 80
 Asp Asn Val Ser Cys Leu Thr Ala Tyr His Thr Asn Gly Gln Ile Lys
 85 90 95
 Gln Tyr Leu Glu Cys Leu Asn Asn Arg Ala Tyr Gly Arg Tyr Arg Glu
 100 105 110
 Trp His Val Asn Gly Asn Ile Lys Ile Gln Ala Glu Val Ile Gly Gly
 115 120 125
 Ile Ala Asp Leu His Pro Ser Ala Glu Ser Gly Trp Leu Phe Asp Gln
 130 135 140
 Thr Thr Phe Ala Tyr Asn Asp Glu Gly Ile Leu Glu Ala Ala Ile Val
 145 150 155 160
 Tyr Glu Lys Gly Leu Leu Glu Gly Ser Ser Val Tyr Tyr His Thr Asn
 165 170 175
 Gly Asn Ile Trp Lys Glu Cys Pro Tyr His Lys Gly Val Pro Gln Gly
 180 185 190
 Lys Phe Leu Thr Tyr Thr Ser Ser Gly Lys Leu Leu Lys Glu Gln Asn
 195 200 205
 Tyr Gln Gln Gly Lys Arg His Gly Leu Ser Ile Arg Tyr Ser Glu Asp
 210 215 220
 Ser Glu Glu Asp Val Leu Ala Trp Glu Glu Tyr His Glu Gly Arg Leu
 225 230 235 240

PCT/IB98/01890

Ala	Met	Asn	Phe	Lys	Leu	Pro	Val	Tyr	His	Ile	Gly	Leu	Thr	Lys	Ala
1				5					10					15	
Glu	Asn	Asn	Thr	Ile	Lys	Ile	Ala	Ile	Leu	Gln	Lys	Thr	Cys	Lys	Gly
			20					25					30		
Trp	Ile	Val	Cys	His	Cys	Glu	Gln	Ile	Pro	Glu	Gly	Lys	Thr	Trp	Ser
		35					40					45			
Leu	Pro	Lys	Lys	Tyr	Phe	Ala	Ala	Pro	Thr	Thr	Phe	Ser	Leu	Gln	Gly
	50					55					60				
Ser	Asp	Ile	Leu	Val	Lys	Ser	Ser	Ser	Ser	Ser	Leu	Lys	Asn	Arg	Lys
65					70					75				80	

Asn Ile Leu Lys Val Ala Leu Thr Asn Leu Glu Ala Ser Leu Ala Leu
 85 90 95
 Pro Trp Glu Ser Leu Ile Val Gln Pro Gln Leu Gly Lys Pro Thr Asp
 100 105 110
 Arg Gly Glu Thr Pro Leu Thr Leu Trp Ile Ala Gln Lys Asn Thr Leu
 115 120 125
 Lys Lys Glu Leu Ser Phe Leu Ser Gln Ala Gln Ile Phe Pro Asp Lys
 130 135 140
 Leu Ser Cys Arg Ala Ala Asp Ile Phe Phe Leu Ala Glu Gln Ser Pro
 145 150 155 160
 Leu Lys Ser Leu Pro Ala Tyr Leu Leu Ile Tyr Gly Gly Ser Glu Glu
 165 170 175
 Val Thr Cys Ile Phe Val Lys Asn His Ala Ile Ala Val Ala Arg Ser
 180 185 190
 Phe Ser Asn His Ser Thr Lys Lys Ser Cys Asp Asp Ile His Ala Thr
 195 200 205
 Leu Gln Tyr Ile Gln Glu Thr Phe Pro Gln Thr Val Leu Pro Ala Ile
 210 215 220
 His Val Ala Gln Ile Ser Pro Asn Leu Gln Xaa Ile Leu Glu Gln Lys
 225 230 235 240
 Leu Ser Leu Pro Leu Val Val Cys Gln Ser Met Thr Tyr Gly Val Glu
 245 250 255
 Asp Glu Asp Trp Glu Ile Tyr Gly Asp Thr Ile Ala Ala Ala His His
 260 265 270
 Gly Ala Ser Arg Arg Pro Leu Thr Phe Pro Tyr Asp Ala Thr Ser Val
 275 280 285
 Ser Pro Ala Ala Gln Lys His Trp Leu Leu Arg Ser Ser Leu Leu Ile
 290 295 300
 Gly Lys Tyr Ala Leu Met Ala Thr Val Val Val Ser Leu Gly Ser Val
 305 310 315 320
 Leu Lys Leu Lys Ser Leu Ser Ser Ser Ala Ser Asn His Phe Ala Phe
 325 330 335
 Ala Cys Pro Glu Glu Gly Val Leu Pro Arg Ser Leu Lys Ala Ala Glu
 340 345 350
 Lys Thr Val Lys Ala Ile Gly Lys Lys Asn Ser Ala Ser Asn Tyr Pro
 355 360 365
 Leu Leu Pro Thr Ile Pro Thr Ser Glu Gln Thr Leu Lys Phe Leu Leu
 370 375 380
 Ala Leu Gly Lys Ser Ser Pro Ser Ile Lys Phe Ser Tyr Phe Ser Tyr
 385 390 395 400
 Thr Met Thr Ser Tyr Pro Ser Lys Asp Asn Pro Ser Leu Pro Tyr Ser
 405 410 415
 Ala Leu Val Glu Val Lys Gly Gln Gly Gln Pro Glu Asp Ile Pro Gln
 420 425 430
 Phe Leu Lys Lys Ile Ser Ser His Pro Lys Leu Gln His Val Ser Glu
 435 440 445
 Ser Leu Glu Asp Gln Arg Ser Phe Lys Leu Gln Phe Thr Leu Ser Ser
 450 455 460
 <210>817
 <211>130
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>817
 Met Ala Ala Pro Ile Phe Ile Lys Asn Ile Leu Leu Arg Ser Ser Ile
 1 5 10 15
 Val Tyr Ala Pro Leu Ala Gly Phe Ser Asp Tyr Pro Tyr Arg Cys Met
 20 25 30
 Ser Ala Leu Tyr Gln Pro Gly Leu Met Phe Cys Glu Met Val Lys Val
 35 40 45
 Glu Gly Ile Leu Tyr Ala Pro Glu Arg Thr Ser Lys Leu Leu Asp Tyr
 50 55 60
 Asn Glu Asn Met Arg Pro Ile Gly Ala Gln Leu Cys Gly Ser Asn Pro
 65 70 75 80
 Glu Thr Ser Gly Glu Ala Ala Lys Ile Leu Glu Gly Leu Gly Phe Asp

85 90 95
 Leu Ile Asp Leu Asn Cys Gly Cys Pro Thr Asp Lys Ile Thr Lys Asp
 100 105 110
 Gly Ser Gly Ser Gly Leu Phe Glu Asp Ala Arg Ala Tyr Trp Glu Asp
 115 120 125
 Phe Arg
 130
 <210>818
 <211>235
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>818
 Ile Val Asp Val Leu Gln Ile Lys Ser Pro Lys Met Ala Val Gly Gln
 1 5 10 15
 Val Phe Leu Lys Thr Pro Glu Leu Ile Gly Arg Ile Leu Asp Lys Ile
 20 25 30
 Ile Asn Ser Val Ser Ile Pro Val Thr Val Lys Ile Arg Ser Gly Trp
 35 40 45
 Asp Met Glu His Ile Asn Val Glu Asp Thr Val Arg Ile Ile Arg Asp
 50 55 60
 Ala Gly Ala Ser Ala Val Phe Val His Gly Arg Thr Arg Ala Gln Gly
 65 70 75 80
 Tyr His Gly Pro Ser Lys Gln Glu Tyr Ile Ser Arg Ala Lys Ala Ala
 85 90 95
 Ala Gly Lys Glu Phe Pro Val Phe Gly Asn Gly Asp Ile Phe Ser Pro
 100 105 110
 Glu Ala Ala Gln Ala Met Leu Thr Thr Gly Cys Asp Gly Val Leu Val
 115 120 125
 Ala Arg Gly Thr Leu Gly Ala Pro Trp Ile Gly Lys Gln Ile Gln Asp
 130 135 140
 Tyr Leu Thr Thr Gly Ser Tyr Glu Lys Ile Pro Phe Ile Lys Arg Lys
 145 150 155 160
 Ala Ala Phe Leu Glu His Met Arg Leu Val Glu Asp Tyr Tyr Gln Ser
 165 170 175
 Glu Thr Lys Phe Leu Ser Glu Thr Arg Lys Leu Cys Gly His Tyr Leu
 180 185 190
 Ile Ser Ala Ala Lys Val Arg Phe Leu Arg Ser Ser Leu Ala Lys Ala
 195 200 205
 Thr Ser Tyr Gln Glu Val Tyr Gln Leu Val Asn Asp Tyr Glu Glu Ala
 210 215 220
 Asp Asp Ser Ser Leu Glu Thr Phe Val Lys Cys
 225 230 235
 <210>819
 <211>827
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>819
 Met Lys Lys Ser Leu Ile Ile Val Glu Ser Pro Ala Lys Ile Lys Thr
 1 5 10 15
 Leu Gln Lys Leu Leu Gly Ser Glu Phe Val Phe Ala Ser Ser Ile Gly
 20 25 30
 His Ile Val Asp Leu Pro Ala Lys Glu Phe Gly Ile Asp Val Asp His
 35 40 45
 Asp Phe Glu Pro Gln Tyr Gln Val Leu Pro Asp Lys Gln Glu Val Ile
 50 55 60
 Asn His Ile Arg Lys Leu Ala Ala Lys Cys Glu Lys Val Tyr Leu Ser
 65 70 75 80
 Pro Asp Pro Asp Arg Glu Gly Glu Ala Ile Ala Trp His Ile Ala Asn
 85 90 95
 Gln Leu Pro Asp Ser Pro Leu Ile Gln Arg Val Ser Phe Asn Ala Ile
 100 105 110
 Thr Lys Asn Ala Val Thr Glu Ala Leu Lys His Pro Arg Thr Ile Asp
 115 120 125
 Met Ala Leu Val Asn Ala Gln Gln Ala Arg Arg Leu Leu Asp Arg Ile

130 135 140
 Val Gly Tyr Lys Ile Ser Pro Ile Leu Ser Arg Lys Leu Gln Gln Arg
 145 150 155 160
 Ser Gly Ile Ser Ala Gly Arg Val Gln Ser Val Ala Leu Lys Leu Val
 165 170 175
 Val Asp Arg Glu Lys Ala Ile Asp Ala Phe Val Pro Val Glu Tyr Trp
 180 185 190
 Asn Leu Arg Val Leu Met Gln Asp Pro Lys Thr Thr Lys Thr Phe Trp
 195 200 205
 Ala His Leu Tyr Ala Val Gln Gly Lys Lys Trp Glu Lys Glu Ile Pro
 210 215 220
 Glu Gly Lys Thr Glu Asn Asp Val Leu Leu Ile Asn Ser Glu Glu Lys
 225 230 235 240
 Ala Arg His Tyr Ala Glu Leu Leu Glu Lys Ser Ser Tyr Thr Ile Thr
 245 250 255
 Arg Val Glu Ala Lys Ala Lys Arg Arg Phe Ala Pro Pro Pro Phe Ile
 260 265 270
 Thr Ser Thr Leu Gln Gln Glu Ala Ser Arg His Phe Arg Phe Ser Ala
 275 280 285
 Ser Arg Thr Met Ser Ile Ala Gln Thr Leu Tyr Glu Gly Val Asp Leu
 290 295 300
 Asp Ser Glu Asp Ser Thr Gly Leu Ile Thr Tyr Met Arg Thr Asp Ser
 305 310 315 320
 Val Arg Val Asp Pro Glu Ala Leu Thr Thr Val Arg Glu Tyr Ile Gln
 325 330 335
 Gln Thr Phe Gly Lys Glu Tyr Leu Pro Glu Lys Ala Asn Val Tyr Thr
 340 345 350
 Thr Lys Lys Met Thr Gln Asp Ala His Glu Ala Ile Arg Pro Thr Asp
 355 360 365
 Ile Asn Leu Thr Pro Asp Lys Leu Lys Asn Lys Leu Ser Asp Asp Gln
 370 375 380
 Phe Lys Val Tyr Asn Leu Ile Trp Lys Arg Phe Val Ala Ser Gln Ile
 385 390 395 400
 Thr Pro Ala Ile Tyr Asp Thr Leu Ala Val Gln Ile Thr Thr Asp Thr
 405 410 415
 Glu Ile Asp Leu Arg Ala Ser Gly Ser Leu Leu Lys Phe Lys Gly Phe
 420 425 430
 Leu Ala Val Tyr Glu Glu Lys Gln Asp Asp Glu Asn Asp Gln Glu Glu
 435 440 445
 Asp His Pro Leu Pro Pro Leu His Ala Gln Asp Ala Leu Ile Lys Glu
 450 455 460
 Glu Val Ser Gln Glu Gln Ala Phe Thr Lys Pro Leu Pro Arg Phe Thr
 465 470 475 480
 Glu Ala Ser Leu Val Lys Glu Leu Glu Lys Ser Gly Ile Gly Arg Pro
 485 490 495
 Ser Thr Tyr Ala Thr Ile Met Asn Lys Ile Gln Ser Arg Glu Tyr Thr
 500 505 510
 Thr Lys Glu Asn Gln Arg Leu Arg Pro Thr Glu Leu Gly Lys Ile Ile
 515 520 525
 Ser Gln Phe Leu Glu Thr Asn Phe Pro Arg Ile Met Asp Ile Gly Phe
 530 535 540
 Thr Ala Leu Met Glu Asp Glu Leu Glu Leu Ile Ala Asp Asn Lys Lys
 545 550 555 560
 Pro Trp Lys Leu Leu Leu Gln Glu Phe Trp Thr Thr Phe Leu Pro Val
 565 570 575
 Val Ile Thr Ala Glu Lys Glu Ala Val Ile Pro Arg Ile Leu Thr Asn
 580 585 590
 Ile Glu Cys Ser Lys Cys His Lys Gly Lys Leu Val Lys Ile Trp Ser
 595 600 605
 Lys Asn Ser Tyr Phe Tyr Gly Cys Ser Glu Tyr Pro Glu Cys Asp Tyr
 610 615 620
 Arg Thr Ser Glu Glu Glu Leu Ala Phe Asn Lys Glu Asp Tyr Ala Glu
 625 630 635 640
 Asp Thr Pro Trp Asp Ser Pro Cys Pro Leu Cys Gly Gly Val Met Lys

645 650 655
 Val Arg His Gly Arg Tyr Gly Thr Phe Leu Gly Cys Glu Lys Tyr Pro
 660 665 670
 Glu Cys Arg Gly Thr Ile Ser Ile His Lys Lys Gly Glu Glu Ile Glu
 675 680 685
 Gln Glu Glu Pro Ile Pro Cys Pro Ala Ile Gly Cys Asn Gly Lys Ile
 690 695 700
 Phe Lys Lys Arg Ser Arg Tyr Asn Lys Ile Phe Tyr Ser Cys Ser Glu
 705 710 715 720
 Tyr Pro Glu Cys Ser Val Ile Gly Asn Ser Ile Asp Ala Val Ile Thr
 725 730 735
 Lys Tyr Ser Gly Thr Glu Lys Ile Pro Tyr Lys Lys Lys Thr Pro Thr
 740 745 750
 Lys Lys Lys Ser Ser Ala Lys Thr Thr Lys Ala Ala Lys Thr Pro Ser
 755 760 765
 Lys Lys Gly Lys Ala Lys Ser Ser Val Lys Lys Ser Ser Glu Lys Lys
 770 775 780
 Thr Gly Pro Leu Phe Leu Pro Ser Pro Asp Leu Ala Lys Met Ile Gly
 785 790 795 800
 Asn Glu Xaa Arg Ile Ser Gly Arg Ser Asn Gln Lys Asn Leu Gly Leu
 805 810 815
 His Gln Gly Thr Ser Ile Thr Gly Thr Arg Lys
 820 825
 <210>820
 <211>270
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>820
 Lys Pro Arg Thr Arg Asn Val Glu Lys Leu Glu Phe Val Thr Ser Leu
 1 5 10 15
 Ser Ser Pro Asp Asp Leu Ile Thr Phe Asn Lys Gln Gly Leu Ile
 20 25 30
 Ala Gly Pro Glu Glu Glu Lys Val Ala Phe Leu Val Arg Ser Asn Ala
 35 40 45
 Met Leu Asp Ala Gly Pro Glu Thr Pro Ala Ser Phe Pro Glu Ser Leu
 50 55 60
 Arg Glu Gln Phe Asp Ile Phe Pro Glu Tyr Val Glu Val Leu Tyr Ser
 65 70 75 80
 Asn Glu Gly Leu Asp Val Trp Glu Ala Gly Cys Thr Trp Ile Leu Asn
 85 90 95
 Asn Glu Val Thr Ile Gln Leu Arg Lys His His Arg Lys Ala Ser Arg
 100 105 110
 Trp Leu Gly Met Tyr Ser Arg Asp Glu Val Leu Ala His Glu Ala Val
 115 120 125
 His Ala Val Arg Met Lys Phe His Glu Pro Val Phe Glu Glu Val Leu
 130 135 140
 Ala Tyr Gln Thr Ser Arg Trp Gly Trp Arg Arg Phe Phe Gly Pro Leu
 145 150 155 160
 Phe Arg Ser Pro Gly Glu Ser Tyr Leu Leu Leu Phe Phe Thr Ile Leu
 165 170 175
 Gly Leu Gly Ile Ser Leu Trp Tyr Pro Ala Gly Ile Leu Ile Met Leu
 180 185 190
 Val Leu Pro Met Tyr Phe Leu Met Arg Leu Cys Met Ala Gln Ser Tyr
 195 200 205
 Leu Tyr Arg Ala Met Lys Lys Ile Arg Lys Met Leu Gly Val Pro Pro
 210 215 220
 Leu Trp Val Leu Leu Arg Leu Thr Asp Lys Glu Ile Lys Met Phe Ala
 225 230 235 240
 Lys Glu Pro Ile Pro Val Leu Glu His Tyr Ala Arg Lys Arg Lys Leu
 245 250 255
 Glu Asn Val Arg Trp Lys Gln Ile Tyr Gln Ser Tyr Phe Val
 260 265 270
 <210>821
 <211>456

<212>PRT

<213>Chlamydia pneumoniae

<400>821

Ile Phe Lys Gly Asn Ser Lys Arg Leu Tyr Asp Ser Ser Ala Leu Asp
 1 5 10 15
 Met Phe Gln Gln Lys Gln Lys Leu Ser Leu Lys Tyr Leu Pro Ser Leu
 20 25 30
 Arg Met Gln Gln Gly Leu Gln Met Leu Gln Ser Pro Leu Thr Glu Leu
 35 40 45
 Ser Ser Tyr Val Val Gln Glu Ile Ile Asp Asn Pro Phe Phe Asp Leu
 50 55 60
 Ser Ser Leu Glu Glu Glu Glu Trp Ser Pro Cys Tyr Arg Pro Thr Asn
 65 70 75 80
 Ser Thr Phe Ser Tyr Leu Asn Gln Thr Pro Gly Pro Gln Glu Ser Leu
 85 90 95
 Tyr Thr Arg Leu Leu Pro Gln Ile Glu Glu Ala Phe Ser Thr Ala Glu
 100 105 110
 Glu Arg Phe Ile Ala His Gln Ile Ala Gly Asn Leu Ser Asp Glu Gly
 115 120 125
 Leu Phe Leu Arg Asn Pro Glu Asp Phe Ala Gln Glu Leu Glu Leu Pro
 130 135 140
 Leu Glu Lys Ile His Lys Val Trp Asp Thr Ile Gln Asn Leu Ser Pro
 145 150 155 160
 Glu Gly Ile Ala Ser Pro Ser Leu Gln Ser Tyr Trp Met Lys Leu Leu
 165 170 175
 Arg Asn Ser Ser His Gln Gln Ala Tyr Ser Ile Val Arg Asp Cys Tyr
 180 185 190
 Pro Leu Met Thr Asn Cys Glu Phe Ala Pro Ile Met Lys Lys Phe Ser
 195 200 205
 Leu Ser Leu Ser Glu Leu Arg Asn Ile Leu Lys Lys Ala Leu Gly Ser
 210 215 220
 Ile Pro Trp Cys Pro Ala Ala Ala Cys Thr Val Lys Pro Met Val Ser
 225 230 235 240
 Thr Pro Leu Pro Asp Ile Tyr Leu Phe Tyr Ser Ser Gly Ser Trp Lys
 245 250 255
 Ile Glu Val Ser Thr Arg Gly Leu Pro Ser Ile Lys Leu Asn Lys Glu
 260 265 270
 Thr Phe His Phe Tyr Glu His Leu Pro Lys Glu Glu Gln Lys Asn Leu
 275 280 285
 Ser Gln Gln Ile Leu Ser Ala Lys Trp Leu Ile Lys Asn Leu Arg Lys
 290 295 300
 Arg Glu Gln Thr Leu Leu Gln Val Met Glu Thr Leu Leu Pro Lys Gln
 305 310 315 320
 Glu Asp Phe Leu Leu Gly Lys Ile Pro Ala Pro Tyr Pro Leu Gly Ile
 325 330 335
 Lys Asp Leu Ala Glu Asp Leu Ser Phe His Glu Ser Thr Ile Phe Arg
 340 345 350
 Ala Ile Glu Asn Lys Ala Val Ala Ala Pro Ile Gly Ile Phe Pro Leu
 355 360 365
 Lys His Leu Phe Pro Arg Gly Ile His Gln Asp Ser Ser His Ser Lys
 370 375 380
 Glu Asn Val Leu Gln Trp Ile Arg Gln Trp Ile Ala Thr Glu Gln Thr
 385 390 395 400
 Pro Leu Ser Asp Ser Val Ile Ser Asp Arg Ile Thr Ala Lys Gly Ile
 405 410 415
 Pro Cys Ala Arg Arg Thr Val Ala Lys Tyr Arg Ala Gln Leu Lys Ile
 420 425 430
 Leu Pro Ala Asn Lys Arg Lys Lys Leu Phe Tyr Ile Arg Ser Ser Asn
 435 440 445
 Ser His Phe Arg Asp Arg Gln Phe
 450 455
 <210>822
 <211>644
 <212>PRT

<213>Chlamydia pneumoniae

<400>822

Lys Leu Gly Leu Ile Met Thr Cys Ile Ser Glu Leu Asn Glu Ala Gln
 1 5 10 15
 Arg Lys Ala Val Thr Ala Pro Leu Asn Pro Val Leu Val Leu Ala Gly
 20 25 30
 Ala Gly Ala Gly Lys Thr Arg Val Val Thr Tyr Arg Ile Leu His Leu
 35 40 45
 Ile Asn Gln Gly Ile Ala Pro Arg Glu Ile Leu Ala Val Thr Phe Thr
 50 55 60
 Asn Lys Ala Ala Arg Glu Leu Lys Glu Arg Ile Val Asn Gln Cys Ala
 65 70 75 80
 Ser Thr Asn Glu Phe Asp Val Pro Met Val Cys Thr Phe His Ser Leu
 85 90 95
 Gly Val Phe Ile Leu Arg Arg Ser Ile Asn Leu Leu Asn Arg Glu Asn
 100 105 110
 Asn Phe Thr Ile Tyr Asp Gln Ser Asp Ala Glu Lys Leu Ile Lys His
 115 120 125
 Ala Leu Gln Gln His Asn Leu Lys Pro Asn Leu Ala Ser Lys Ile Gln
 130 135 140
 Ala His Val Ser Gln Ala Lys Asn Arg Leu Leu Phe Pro Glu Asp Leu
 145 150 155 160
 Asp Pro Asn Asp Tyr Ile Asp Pro Val Val Ser Ile Tyr Gln Glu Tyr
 165 170 175
 Gln Lys Lys Leu Ile Glu Ala Asn Ala Leu Asp Phe Asp Asp Leu Leu
 180 185 190
 Phe Leu Thr Val Arg Leu Leu Arg Glu Ser Pro Glu Ala Gln Glu Leu
 195 200 205
 Tyr Asn Gln Leu Trp Lys Ala Leu Leu Ile Asp Glu Tyr Gln Asp Thr
 210 215 220
 Asn His Ala Gln Tyr Thr Leu Met Gln Leu Leu Ser Lys Gln His Arg
 225 230 235 240
 Asn Val Phe Ala Val Gly Asp Pro Asp Gln Ser Ile Tyr Ser Trp Arg
 245 250 255
 Gly Ala Asn Ile His Asn Ile Leu Asn Phe Glu Asn Asp Tyr Pro Asn
 260 265 270
 Ala Lys Val Leu Cys Leu Glu Glu Asn Tyr Arg Ser Tyr Gly Asn Ile
 275 280 285
 Leu Asn Ala Ala Asn Ala Leu Ile Lys Asn Asn Ala Ser Arg Leu Glu
 290 295 300
 Lys Glu Leu Arg Ser Val Lys Gly Pro Gly Glu Lys Ile Arg Leu Phe
 305 310 315 320
 Leu Gly Ser Thr Asp Arg Glu Glu Ala Asp Phe Val Ala Ala Glu Ile
 325 330 335
 Leu Gln Leu His Arg Val Gly Asn Ile Lys Leu Arg Asp Ile Cys Ile
 340 345 350
 Phe Tyr Arg Thr Asn Ser Gln Ser Arg Thr Phe Glu Asp Ala Leu Leu
 355 360 365
 Arg Arg Arg Ile Pro Tyr Glu Ile Ile Gly Gly Leu Ser Phe Tyr Lys
 370 375 380
 Arg Lys Glu Ile Gln Asp Ile Leu Ala Phe Leu Arg Ile Phe Ile Ser
 385 390 395 400
 Lys Ser Asp Ile Val Ala Phe Asp Arg Thr Val Asn Leu Pro Lys Arg
 405 410 415
 Gly Ile Gly Ser Thr Thr Ile Phe Ala Leu Thr Gln Tyr Ala Ile Ala
 420 425 430
 Gln Gly Leu Pro Ile Leu Lys Ala Cys Gln Gln Ala Leu Asp Thr Lys
 435 440 445
 Asp Val Lys Leu Ser Lys Lys Gln Gln Glu Gly Leu Gln Glu Tyr Leu
 450 455 460
 Ala Leu Phe Pro Gln Ile Glu His Ala Tyr Asn Thr Leu Ser Leu Arg
 465 470 475 480
 Asp Phe Ile Glu Ser Val Val Arg Ile Thr Gly Tyr Leu Glu Ile Leu
 485 490 495

Lys Glu Asp Ala Asp Thr Phe Lys Asp Arg Lys Ser Asn Leu Glu Glu
 500 505 510
 Leu Tyr His Lys Ala Leu Glu Ser Glu Gln Gln Asn Pro Lys Thr His
 515 520 525
 Leu Glu Leu Phe Leu Asp Asp Leu Ala Leu Lys Gly Ser Asp Asp Asp
 530 535 540
 Leu Asn Leu Thr Ala Asp Arg Val Asn Leu Met Thr Leu His Asn Gly
 545 550 555 560
 Lys Gly Leu Glu Phe Arg Val Ser Phe Leu Val Gly Leu Glu Glu Gln
 565 570 575
 Leu Leu Pro His Ala Asn Ser Leu Gly Gly Thr Tyr Glu Asn Ile Glu
 580 585 590
 Glu Glu Arg Arg Leu Cys Tyr Val Gly Ile Thr Arg Ala Gln Asp Leu
 595 600 605
 Leu Tyr Leu Thr Ala Ala Gln Val Arg Ser Leu Trp Gly Thr Val Arg
 610 615 620
 Met Met Lys Pro Ser Arg Phe Leu Lys Glu Ile Pro Lys Asp Tyr Met
 625 630 635 640
 Ile Gln Val Arg

<210>823

<211>236

<212>PRT

<213>Chlamydia pneumoniae

<400>823

Met Gln Asn Ala Thr Ile Asp Gln Leu Pro Val Ser Trp Gln Glu Gln
 1 5 10 15
 Leu Pro Leu Cys Trp Arg Glu Gln Leu Lys Glu Glu Trp Ser Lys Pro
 20 25 30
 Tyr Met Gln Gln Leu Leu Ile Phe Leu Lys Gln Glu Tyr Lys Glu His
 35 40 45
 Thr Val Tyr Pro Glu Glu Asn Cys Val Phe Ser Ala Leu Arg Ser Thr
 50 55 60
 Pro Phe Asp Gln Val Arg Val Val Ile Leu Gly Gln Asp Pro Tyr Pro
 65 70 75 80
 Gly Lys Gly Gln Ala His Gly Leu Ser Phe Ser Val Pro Glu Gly Gln
 85 90 95
 Arg Leu Pro Pro Ser Leu Ile Asn Ile Phe Arg Glu Leu Lys Thr Asp
 100 105 110
 Leu Gly Ile Glu Asn His Lys Gly Cys Leu Gln Ser Trp Ala Asn Gln
 115 120 125
 Gly Ile Leu Leu Leu Asn Thr Val Leu Thr Val Arg Ala Gly Glu Pro
 130 135 140
 Phe Ser His Ala Gly Lys Gly Trp Glu Leu Phe Thr Asp Ala Ile Val
 145 150 155 160
 Thr Lys Leu Ile Gln Glu Arg Thr His Ile Ile Phe Val Leu Trp Gly
 165 170 175
 Ala Ala Ala Arg Lys Lys Cys Glu Leu Leu Phe Asn Ser Lys His Gln
 180 185 190
 His Ala Val Leu Ser Ser Pro His Pro Ser Pro Leu Ala Ala His Arg
 195 200 205
 Gly Phe Phe Gly Cys Ser His Phe Ser Lys Ile Asn Tyr Leu Leu Asn
 210 215 220
 Lys Leu Asn Lys Pro Met Ile Asn Trp Lys Leu Pro
 225 230 235

<210>824

<211>206

<212>PRT

<213>Chlamydia pneumoniae

<400>824

Met Lys Ile Val Ile Ala Ser Ser His Gly Tyr Lys Ile Arg Glu Thr
 1 5 10 15
 Lys Thr Phe Leu Lys Arg Leu Gly Asp Phe Asp Ile Phe Ser Leu Ser
 20 25 30

Asp Phe Pro Asp Tyr Lys Leu Pro Gln Glu Gln Glu Asp Ser Ile Thr
 35 40 45
 Ala Asn Ala Leu Thr Lys Gly Ile His Ala Ala Asn His Leu Gly Cys
 50 55 60
 Trp Val Ile Ala Asp Asp Thr Met Leu Arg Val Pro Ala Leu Asn Gly
 65 70 75 80
 Leu Pro Gly Pro Leu Ser Ala Asn Phe Ala Gly Val Gly Ala Tyr Asp
 85 90 95
 Lys Asp His Arg Lys Lys Leu Leu Asp Leu Met Ser Ser Leu Glu Ser
 100 105 110
 Leu Val Asp Arg Ser Ala Tyr Phe Glu Cys Cys Val Val Leu Val Ser
 115 120 125
 Pro Asn Gln Glu Ile Phe Lys Thr Tyr Gly Ile Cys Glu Gly Tyr Ile
 130 135 140
 Ser His Gln Glu Lys Gly Ser Ser Gly Phe Gly Tyr Asp Pro Ile Phe
 145 150 155 160
 Val Lys Tyr Asp Tyr Lys Gln Thr Phe Ala Glu Leu Ser Glu Asp Val
 165 170 175
 Lys Asn Gln Val Ser His Arg Ala Lys Ala Leu Gln Lys Leu Ala Pro
 180 185 190
 His Leu Gln Ser Leu Phe Glu Lys His Leu Leu Thr Arg Asp
 195 200 205
 <210>825
 <211>424
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>825
 Leu Met Phe Phe Gln Phe Leu Ser Phe Thr Met Lys Lys Ile Phe Tyr
 1 5 10 15
 Ser Phe Val Leu Leu Ser Cys Ile Phe Pro Tyr Val Gly Cys Ala Gln
 20 25 30
 Val Phe Val Gly Leu Asp Arg Ile Phe Ser Glu Gly Glu Tyr Thr Arg
 35 40 45
 Cys Ile Gln Gly Lys Lys Ile Ala Leu Ile Ser His Ser Ala Ala Ile
 50 55 60
 Asn Ser Arg Gly Gln Asp Ala Leu Ser Val Phe Tyr Ser Arg Lys His
 65 70 75 80
 Asp Cys Thr Val Glu Ile Leu Cys Thr Leu Glu His Gly Tyr Tyr Gly
 85 90 95
 Ala Thr Pro Thr Glu Thr Val Gly Asn Gln Pro Ser Arg Tyr Pro Asn
 100 105 110
 Leu Arg Ser Val Ser Leu Tyr Gly Val Lys Glu Val Pro Lys Glu Val
 115 120 125
 Ala Glu His Cys Asp Val Phe Val Tyr Asp Val Gln Asp Ile Gly Val
 130 135 140
 Arg Ser Tyr Ser Phe Val Thr Val Leu Met Gln Ile Val Lys Ala Ser
 145 150 155 160
 Glu Arg Tyr Gly Lys Gln Leu Ile Val Leu Asp Arg Pro Asn Pro Met
 165 170 175
 Gly Gly Arg Ile Val Asp Gly Pro Leu Pro Asn Pro Thr Thr Ser Gly
 180 185 190
 Ser Leu Ala Ile Pro Tyr Cys Tyr Gly Met Thr Pro Gly Glu Leu Ala
 195 200 205
 Leu Phe Phe Lys Lys Thr Tyr Ala Pro Asn Ala Asn Val Val Val Ile
 210 215 220
 Pro Met Lys Gly Trp Asn Arg Ser Met Thr Phe Asp Glu Thr Gly Leu
 225 230 235 240
 Ile Trp Met Pro Thr Ser Pro Gln Met Pro Asp Pro Gln Ser Pro Phe
 245 250 255
 Phe Tyr Ala Ala Thr Gly Ile Leu Gly Ala Leu Ser Val Ala Ser Ile
 260 265 270
 Gly Val Gly Tyr Thr Leu Pro Phe Lys Val Leu Gly Ala Pro Trp Met
 275 280 285
 Asp Gly Glu Lys Val Ala Asp Glu Leu Asn Arg Met Lys Leu Pro Gly

290 295 300
 Val Leu Phe Leu Pro Phe Tyr Glu Pro Phe Phe Gly Lys Tyr Lys
 305 310 315 320
 Met Glu Met Cys Ser Gly Val Leu Leu Val Leu Gln Asp Pro Lys Ile
 325 330 335
 Phe Tyr Pro Val Glu Thr Gln Cys Thr Ile Trp Gly Val Leu Lys Ala
 340 345 350
 Leu Tyr Pro Lys Gln Val Glu Gln Thr Leu Lys Ser Ile Glu Arg Ile
 355 360 365
 Pro Ala Arg Arg Ser Ser Ile Cys Asn Leu Phe Gly Gly Asp Glu Phe
 370 375 380
 Leu Ser Ile Ser His Lys Glu Arg Tyr Ile Val Trp Pro Leu Arg Arg
 385 390 395 400
 Leu Cys Lys Glu Ser Arg Glu Ser Phe His Gln Leu Arg Ser Ser Cys
 405 410 415
 Leu Leu Ser Glu Tyr Ala Glu Ser
 420
 <210>826
 <211>527
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>826
 Arg Val Val Trp Val Phe Lys Ser Gln Phe Glu Gly Leu Ser Ala Leu
 1 5 10 15
 Lys Arg Gly Val His Ala Leu Thr Lys Ala Val Thr Pro Ala Phe Gly
 20 25 30
 Pro Arg Gly Tyr Asn Val Val Ile Lys Lys Gly Lys Ala Pro Ile Val
 35 40 45
 Leu Thr Lys Asn Gly Ile Arg Ile Ala Lys Glu Ile Ile Leu Gln Asp
 50 55 60
 Ala Phe Glu Ser Leu Gly Val Lys Leu Ala Lys Glu Ala Leu Leu Lys
 65 70 75 80
 Val Val Glu Gln Thr Gly Asp Gly Ser Thr Thr Ala Leu Val Val Ile
 85 90 95
 Asp Ala Leu Phe Thr Gln Gly Leu Lys Gly Ile Ala Ala Gly Leu Asp
 100 105 110
 Pro Gln Glu Ile Lys Ala Gly Ile Leu Leu Ser Val Glu Met Val Tyr
 115 120 125
 Gln Gln Leu Gln Arg Gln Ala Ile Glu Leu Gln Ser Pro Lys Asp Val
 130 135 140
 Leu His Val Ala Met Val Ala Ala Asn His Asp Val Thr Leu Gly Thr
 145 150 155 160
 Val Val Ala Thr Val Ile Ser Gln Ala Asp Leu Lys Gly Val Phe Ser
 165 170 175
 Ser Lys Asp Ser Gly Ile Ser Lys Thr Arg Gly Leu Gly Lys Arg Val
 180 185 190
 Lys Ser Gly Tyr Leu Ser Pro Tyr Phe Val Thr Arg Pro Glu Thr Xaa
 195 200 205
 Asp Val Val Trp Glu Glu Ala Leu Val Leu Ile Leu Ser His Ser Leu
 210 215 220
 Val Ser Leu Ser Glu Glu Leu Ile Arg Tyr Leu Glu Leu Ile Ser Glu
 225 230 235 240
 Gln Asn Thr His Pro Leu Val Ile Ile Ala Glu Asp Phe Asp Gln Asn
 245 250 255
 Val Leu Arg Thr Leu Ile Leu Asn Lys Leu Arg Asn Gly Leu Pro Val
 260 265 270
 Cys Ala Val Lys Ala Pro Gly Ser Arg Glu Leu Arg Gln Val Val Leu
 275 280 285
 Glu Asp Leu Ala Ile Leu Thr Gly Ala Thr Leu Ile Gly Gln Glu Ser
 290 295 300
 Glu Asn Cys Glu Ile Pro Val Ser Leu Asp Val Leu Gly Arg Val Lys
 305 310 315 320
 Gln Val Met Ile Thr Lys Glu Thr Phe Thr Phe Leu Glu Gly Gly Gly
 325 330 335

Asp Ala Glu Ile Ile Gln Ala Arg Lys Gln Glu Leu Cys Leu Ala Ile
 340 345 350
 Ala Gly Ser Thr Ser Glu Ser Glu Cys Gln Glu Leu Glu Arg Leu
 355 360 365
 Ala Ile Phe Ile Gly Ser Ile Pro Gln Val Gln Ile Thr Ala Asp Thr
 370 375 380
 Asp Thr Glu Gln Arg Glu Arg Gln Phe Gln Leu Glu Ser Ala Leu Arg
 385 390 395 400
 Ala Thr Lys Ala Ala Met Lys Gly Gly Ile Val Pro Gly Gly Gly Val
 405 410 415
 Ala Phe Leu Arg Ala Ala His Ala Ile Glu Val Pro Ala Asn Leu Ser
 420 425 430
 Ser Gly Met Thr Phe Gly Phe Glu Thr Leu Leu Gln Ala Val Arg Thr
 435 440 445
 Pro Leu Lys Val Leu Ala Gln Asn Cys Gly Arg Ser Ser Glu Glu Val
 450 455 460
 Ile His Thr Ile Leu Ser His Glu Asn Pro Arg Phe Gly Tyr Asn Gly
 465 470 475 480
 Met Thr Asp Thr Phe Glu Asp Leu Val Asp Ala Gly Ile Cys Asp Pro
 485 490 495
 Leu Ile Val Thr Thr Ser Ser Leu Lys Cys Ala Val Ser Val Ser Cys
 500 505 510
 Leu Leu Leu Thr Ser Ser Phe Phe Ile Ser Ser Arg Thr Lys Thr
 515 520 525

<210>827

<211>189

<212>PRT

<213>Chlamydia pneumoniae

<400>827

Ser Leu Val Arg Asn Asn Lys Arg Val Glu Glu Glu Val Phe Met Thr
 1 5 10 15
 Leu Ser Leu Val Gly Lys Glu Ala Pro Asp Phe Val Ala Gln Ala Val
 20 25 30
 Val Asn Gly Glu Thr Cys Thr Val Ser Leu Lys Asp Tyr Leu Gly Lys
 35 40 45
 Tyr Val Val Leu Phe Phe Tyr Pro Lys Asp Phe Thr Tyr Val Cys Pro
 50 55 60
 Thr Glu Leu His Ala Phe Gln Asp Ala Leu Gly Glu Phe His Thr Arg
 65 70 75 80
 Gly Ala Glu Val Ile Gly Cys Ser Val Asp Asp Ile Ala Thr His Gln
 85 90 95
 Gln Trp Leu Ala Thr Lys Lys Lys Gln Gly Gly Ile Glu Gly Ile Thr
 100 105 110
 Tyr Pro Leu Leu Ser Asp Glu Asp Lys Val Ile Ser Arg Ser Tyr His
 115 120 125
 Val Leu Lys Pro Glu Glu Glu Leu Ser Phe Arg Gly Val Phe Leu Ile
 130 135 140
 Asp Lys Gly Glu Ile Ile Arg His Leu Val Val Asn Asp Leu Pro Leu
 145 150 155 160
 Gly Arg Ser Ile Glu Glu Glu Leu Arg Thr Leu Asp Ala Leu Ile Phe
 165 170 175
 Phe Glu Thr Asn Gly Leu Val Cys Pro Ala Lys Leu Ala
 180 185

<210>828 -

<211>136

<212>PRT

<213>Chlamydia pneumoniae

<400>828

Arg Phe Asp Leu Ile Phe Gln Met Lys Phe Thr Val Ala Leu Phe Gly
 1 5 10 15
 Glu Ala Glu Lys Gly Ser Tyr Asp Thr Ala Tyr Phe Cys Arg Ser Leu
 20 25 30
 Val Asp Leu His Asn Tyr Leu Gly Asp Val Ser Ser Pro Gly Ile Thr
 35 40 45

Leu Ala Ile Lys Thr Leu Leu Ser Asp Tyr Asn Val Val Tyr Phe Arg
 50 55 60
 Val Arg Glu Glu Gly Tyr Cys Val Asp Ser Tyr Phe Phe Gly Leu His
 65 70 75 80
 Phe Leu Asn Thr Gln Thr Thr Leu Lys Asn Ile Ile Ala Ile Gly Leu
 85 90 95
 Pro Gly Val Gly Asn Gln His Ile Ile Glu Ala Ser Arg Ser Leu Cys
 100 105 110
 Gln Lys His Asn Ser Leu Leu Leu Phe Phe Asp His Asp Leu Tyr Asp
 115 120 125
 Leu Leu Thr Phe Asn Gln Pro Xaa
 130 135

<210>829

<211>205

<212>PRT

<213>Chlamydia pneumoniae

<400>829

Met His Ala Lys Leu Ser Phe Phe Ile Leu Leu Ser Leu Leu Phe Ser
 1 5 10 15
 Gly Ile Asp Cys Ser Arg Leu His Ala Ala Gly Arg Ser Pro Ser Leu
 20 25 30
 Gln Gly Val Leu Ala Glu Ile Glu Asp Ile Ser Ala Lys Leu Ala Ser
 35 40 45
 His Glu Val Glu Ile Val Met Leu Ser Glu Arg Leu Asp Glu Gln Asp
 50 55 60
 Ser Lys Phe Gln Lys Trp Thr Ala Ala Lys Pro Glu Thr Leu Ala Gln
 65 70 75 80
 Lys Ile Arg Glu Leu Glu Ser Asp Gln Lys Ala Leu Ala Lys Thr Leu
 85 90 95
 Ala Val Leu Thr Thr Ser Val Lys Asp Leu Gln Thr Asn Leu Gln Ser
 100 105 110
 Lys Leu Gln Glu Ile Gln Lys Asp His Arg Ala Leu Ala Gln Asp Leu
 115 120 125
 Arg Leu Val Arg Arg Ser Leu Leu Ala Leu Val Asp Ser Ser Ser Pro
 130 135 140
 Gly Ala Tyr Ala Asp Phe Ser Asp Pro Val Pro Glu Asn Ile Tyr Ile
 145 150 155 160
 Val Arg Glu Gly Asp Ser Leu Ser Lys Ile Ala Lys Lys Tyr Lys Leu
 165 170 175
 Ser Val Thr Glu Leu Lys Lys Ile Asn Lys Leu Asp Ser Asp Ala Ile
 180 185 190
 Tyr Ala Gly Gln Arg Leu Cys Leu Gln Arg Asn Lys Gln
 195 200 205

<210>830

<211>192

<212>PRT

<213>Chlamydia pneumoniae

<400>830

Met Asn Ile His Ser Leu Trp Lys Leu Cys Thr Leu Leu Ala Leu Leu
 1 5 10 15
 Ala Leu Pro Ala Cys Ser Leu Ser Pro Asn Tyr Gly Trp Glu Asp Ser
 20 25 30
 Cys Asn Thr Cys His His Thr Arg Arg Lys Lys Pro Ser Ser Phe Gly
 35 40 45
 Phe Val Pro Leu Tyr Thr Glu Asp Phe Asn Pro Asn Phe Thr Phe
 50 55 60
 Gly Glu Tyr Asp Ser Lys Glu Glu Lys Gln Tyr Lys Ser Ser Gln Val
 65 70 75 80
 Ala Ala Phe Arg Asn Ile Thr Phe Ala Thr Asp Ser Tyr Thr Ile Lys
 85 90 95
 Gly Glu Glu Asn Leu Ala Ile Leu Thr Asn Leu Val His Tyr Met Lys
 100 105 110
 Lys Asn Pro Lys Ala Thr Leu Tyr Ile Glu Gly His Thr Asp Glu Arg
 115 120 125

Gly Ala Ala Ser Tyr Asn Leu Ala Leu Gly Ala Arg Arg Ala Asn Ala
 130 135 140
 Ile Lys Glu His Leu Arg Lys Gln Gly Ile Ser Ala Asp Arg Leu Ser
 145 150 155 160
 Thr Ile Ser Tyr Gly Lys Glu His Pro Leu Asn Ser Gly His Asn Glu
 165 170 175
 Leu Ala Trp Gln Gln Asn Arg Arg Thr Glu Phe Lys Ile His Ala Arg
 180 185 190
 <210>831
 <211>431
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>831
 Met Leu Arg Gln Leu Cys Phe Gln Val Phe Phe Phe Cys Phe Ala Ser
 1 5 10 15
 Leu Val Tyr Ala Glu Glu Leu Glu Val Val Val Arg Ser Glu His Ile
 20 25 30
 Thr Leu Pro Ile Glu Val Ser Cys Gln Thr Asp Thr Lys Asp Pro Lys
 35 40 45
 Ile Gln Lys Tyr Leu Ser Ser Leu Thr Glu Ile Phe Cys Lys Asp Ile
 50 55 60
 Ala Leu Gly Asp Cys Leu Gln Pro Thr Ala Ala Ser Lys Glu Ser Ser
 65 70 75 80
 Ser Pro Leu Ala Ile Ser Leu Arg Leu His Val Pro Gln Leu Ser Val
 85 90 95
 Val Leu Leu Gln Ser Ser Lys Thr Pro Gln Thr Leu Cys Ser Phe Thr
 100 105 110
 Ile Ser Gln Asn Leu Ser Val Asp Arg Gln Lys Ile His His Ala Ala
 115 120 125
 Asp Thr Val His Tyr Ala Leu Thr Gly Ile Pro Gly Ile Ser Ala Gly
 130 135 140
 Lys Ile Val Phe Ala Leu Ser Ser Leu Gly Lys Asp Gln Lys Leu Lys
 145 150 155 160
 Gln Gly Glu Leu Trp Thr Thr Asp Tyr Asp Gly Lys Asn Leu Ala Pro
 165 170 175
 Leu Thr Thr Glu Cys Ser Leu Ser Ile Thr Pro Lys Trp Val Gly Val
 180 185 190
 Gly Ser Asn Phe Pro Tyr Leu Tyr Val Ser Tyr Lys Tyr Gly Val Pro
 195 200 205
 Lys Ile Phe Leu Gly Ser Leu Glu Asn Thr Glu Gly Lys Lys Val Leu
 210 215 220
 Pro Leu Lys Gly Asn Gln Leu Met Pro Thr Phe Ser Pro Arg Lys Lys
 225 230 235 240
 Leu Leu Ala Phe Val Ala Asp Thr Tyr Gly Asn Pro Asp Leu Phe Ile
 245 250 255
 Gln Pro Phe Ser Leu Thr Ser Gly Pro Met Gly Arg Pro Arg Arg Leu
 260 265 270
 Leu Asn Glu Asn Phe Gly Thr Gln Gly Asn Pro Ser Phe Asn Pro Glu
 275 280 285
 Gly Ser Gln Leu Val Phe Ile Ser Asn Lys Asp Gly Arg Pro Arg Leu
 290 295 300
 Tyr Ile Met Ser Leu Asp Pro Glu Pro Gln Ala Pro Arg Leu Leu Thr
 305 310 315 320
 Lys Lys Tyr Arg Asn Ser Ser Cys Pro Ala Trp Ser Pro Asp Gly Lys
 325 330 335
 Lys Ile Ala Phe Cys Ser Val Ile Lys Gly Val Arg Gln Ile Cys Ile
 340 345 350
 Tyr Asp Leu Ser Ser Gly Glu Asp Tyr Gln Leu Thr Thr Ser Pro Thr
 355 360 365
 Asn Lys Glu Ser Pro Ser Trp Ala Ile Asp Ser Arg His Leu Val Phe
 370 375 380
 Ser Ala Gly Asn Ala Glu Glu Ser Glu Leu Tyr Leu Ile Ser Leu Val
 385 390 395 400
 Thr Lys Lys Thr Asn Lys Ile Ala Ile Gly Val Gly Glu Lys Arg Phe

405 410 415
 Pro Ser Trp Gly Ala Phe Pro Gln Gln Pro Ile Lys Arg Thr Leu
 _420 425 430
 <210>832
 <211>194
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>832
 Asn Asp Thr Pro Leu Cys Thr Thr Gln Pro Gln Lys Gln Ala Lys Cys
 1 5 10 15
 Ser Pro Pro Gln Glu Asn Val Gln Lys Ala Leu Gln Lys Pro Ile Pro
 20 25 30
 Lys Val Ile Lys Thr Glu Pro Pro Lys Pro Ser Pro Ala Pro Thr Val
 35 40 45
 Ala Lys Lys Thr Thr Ala Thr Glu Lys Pro Pro Pro Ser Thr Thr Lys
 50 55 60
 Lys Asn Thr Gln Leu Ser Lys Thr Gln Leu Gln Thr Leu Ser Glu Val
 65 70 75 80
 Ala Gln Ala Leu Ser Leu His Val Asp Lys Ile Glu Lys Ser Glu Thr
 85 90 95
 Ser Leu Lys Asn Ile Ser Trp Pro Ser Thr Ala Gln Leu Thr Met His
 100 105 110
 Ser Glu Leu Lys Ala Thr Gln Glu Asp Glu Leu Cys Glu Leu Phe Arg
 115 120 125
 Thr His Ile Ala Leu Pro Ser Lys Gly Tyr Val Arg Ile Lys Leu Val
 130 135 140
 Leu Ser Pro Asn Gly Glu Ile Gln Glu Cys Ser Phe Leu Ser Glu Val
 145 150 155 160
 Ser Ala Ala Asp Lys Gln Leu Leu Thr Gln Arg Ile His Ala Leu Pro
 165 170 175
 Phe Gln Lys Phe Leu Glu Lys Tyr Lys Val Ser Lys Asn Ile Ile Phe
 180 185 190
 Ser Tyr

<210>833
 <211>135
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>833
 Met Lys Tyr Arg Phe Thr Glu Glu Ile Glu Glu Glu Pro Leu Val Asn
 1 5 10 15
 Leu Thr Pro Leu Ile Asp Ile Val Phe Val Ile Leu Met Ala Phe Ile
 20 25 30
 Val Ala Val Pro Leu Ile Lys Leu Asp Ser Ile Ala Leu Ala Pro Gly
 35 40 45
 Thr Gln Glu Gln Glu Val Leu Ser Ser Glu Asn Asp Ser Ile Ala Val
 50 55 60
 Ile Lys Val Phe Ala Asp His Ser Leu Thr Leu Asn Glu His Pro Ile
 65 70 75 80
 Thr Leu Gln Glu Leu Thr Val Arg Leu Thr Leu Leu His Lys Ala Tyr
 85 90 95
 Pro Glu Lys Thr Pro Leu Leu Leu Gln Asp Gly Glu Thr Ser Phe Arg
 100 105 110
 Thr Tyr Gln Asn Val Lys Asn Ala Ile Glu Ala Ala Gly Phe His Glu
 115 120 125
 Leu His Val Ala Leu Gln Asn
 130 135

<210>834
 <211>232
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>834
 Met Val His Phe Ser His Asn Pro Ile Ile Gln Ala Tyr Thr Glu Ala
 1 5 10 15

Asp Phe Phe Gly Lys Ser Ile Phe Phe Cys Leu Leu Ile Leu Ser Val
 20 25 30
 Cys Thr Trp Thr Val Leu His Gln Lys Leu Ala Ile Gln Lys Asn Phe
 35 40 45
 Leu Lys Ala Gly Lys Ser Leu Lys Asp Phe Leu Ile Lys Asn Arg His
 50 55 60
 Ala Pro Leu Ser Leu Asp Ile His Pro Glu Leu Ser Pro Phe Ala Asp
 65 70 75 80
 Leu Tyr Phe Thr Ile Lys Arg Gly Thr Leu Glu Leu Leu Asp Lys Asn
 85 90 95
 Arg Gln Ser Ala Pro Asp Arg Gly Pro Ile Leu Ser Ser Glu Asp Ile
 100 105 110
 Gln Ser Leu Glu Thr Leu Leu Gly Ala Ile Met Pro Lys Tyr Lys Ala
 115 120 125
 Leu Leu His Lys Asn Ser Phe Ile Pro Ala Thr Thr Ile Ser Leu Ala
 130 135 140
 Pro Phe Leu Gly Leu Leu Gly Thr Val Trp Gly Ile Leu Val Ala Phe
 145 150 155 160
 Thr His Ile Ser Ser Gly Ser Ser Gly Asn Ser Ala Ile Met Glu Gly
 165 170 175
 Leu Ala Thr Ala Leu Gly Thr Thr Ile Ile Gly Leu Phe Val Ala Ile
 180 185 190
 Pro Ser Leu Ile Ala Phe Asn Tyr Leu Lys Ala His Ser Ser Glu Leu
 195 200 205
 Ile Ser Glu Ile Glu Gln Thr Ala Tyr Leu Leu Leu Asn Ser Ile Glu
 210 215 220
 Val Lys Tyr Arg Asn Thr Asn Leu
 225 230

<210>835

<211>135

<212>PRT

<213>Chlamydia pneumoniae

<400>835

Leu Lys Ala Ile Ser Glu Gly Ile Ala Thr Lys Ser Pro Ile Ile Val
 1 5 10 15
 Val Pro Arg Ala Val Ala Ser Pro Ser Ile Met Ala Glu Phe Pro Leu
 20 25 30
 Leu Pro Glu Leu Met Trp Val Lys Ala Thr Lys Ile Pro His Thr Val
 35 40 45
 Pro Lys Ser Pro Arg Lys Gly Ala Lys Leu Ile Val Val Ala Gly Ile
 50 55 60
 Lys Leu Phe Leu Cys Lys Arg Ala Leu Tyr Phe Gly Met Met Ala Pro
 65 70 75 80
 Arg Ser Val Ser Lys Asp Trp Ile Ser Ser Glu Glu Arg Met Gly Pro
 85 90 95
 Arg Ser Gly Ala Asp Cys Arg Phe Leu Ser Lys Ser Ser Lys Val Pro
 100 105 110
 Arg Phe Ile Val Lys Tyr Lys Ser Ala Lys Gly Leu Ser Ser Gly Trp
 115 120 125
 Ile Ser Arg Asp Arg Gly Ala
 130 135

<210>836

<211>676

<212>PRT

<213>Chlamydia pneumoniae

<400>836

Ile Ile Gln Val Gln Asn Ser Phe Leu Arg Val Ala Thr Ser Leu Asp
 1 5 10 15
 Tyr Arg His Ser Asp Trp Gly Ser Arg Phe Thr Ala Ser Lys Gly Ser
 20 25 30
 His Ile Tyr Trp Lys Asn Pro Gly Glu Ile Gly Ser Pro Leu Lys Ile
 35 40 45
 Ser Trp Gln Leu Pro Lys Gly Phe Val Val Glu Glu Glu His Trp Pro
 50 55 60

Thr Pro Lys Val Phe Glu Glu Gly Thr Thr Phe Phe Gly Tyr Glu
 65 70 75 80
 Asp Ser Ala Leu Ile Val Ala Asp Val Arg Ala Pro Glu Gly Tyr Thr
 85 90 95
 Pro Gly Gln Glu Val Glu Leu Arg Ala Gln Val Glu Trp Leu Ala Cys
 100 105 110
 Gly Asp Ser Cys Leu Pro Gly Asn Val Asp Leu Lys Leu Thr Leu Pro
 115 120 125
 Tyr Glu Glu Lys Glu Pro Ser Leu Tyr Pro Asp Thr His Ala Glu Phe
 130 135 140
 Thr Lys Thr Leu His Ala Gln Pro Arg Val Leu Glu Asn Asp His Ser
 145 150 155 160
 Val Gln Val Ala Gln Gly Lys Gly Asn Glu Ile Ile Leu Asn Ile Ser
 165 170 175
 Lys Lys Ile Asn Ala Thr Lys Ala Trp Phe Val Ser Glu Lys Ala Asp
 180 185 190
 Lys Leu Phe Ala Tyr Ala Glu Thr Ser Tyr Ser Gly Gly Thr Gly Thr
 195 200 205
 Ala Trp Arg Leu Lys Val Lys Asn Leu Ser Gly Val Gln Lys Asn Glu
 210 215 220
 Lys Leu His Gly Ile Leu Leu Leu Ala Asp His Thr Gly Arg Pro Val
 225 230 235 240
 Glu Ser Leu Thr Ile His Ser Glu Val Leu Gly Gln Thr Gly Ser Ala
 245 250 255
 Val Ala Gly Leu Ser Gln Tyr Ile Thr Ile Leu Ile Met Ala Phe Leu
 260 265 270
 Gly Gly Val Leu Leu Asn Ile Met Pro Cys Val Leu Pro Leu Val Thr
 275 280 285
 Leu Lys Val Tyr Gly Leu Ile Lys Ser Ala Gly Glu His Arg Ser Ser
 290 295 300
 Val Ile Ala Asn Gly Leu Trp Phe Thr Leu Gly Val Val Gly Cys Phe
 305 310 315 320
 Trp Gly Leu Ala Gly Val Ala Phe Ile Leu Lys Val Leu Gly His Asn
 325 330 335
 Ile Gly Trp Gly Phe Gln Leu Gln Glu Pro Met Phe Val Ala Thr Leu
 340 345 350
 Ile Ile Val Phe Phe Leu Phe Ala Leu Ser Ser Leu Gly Leu Phe Glu
 355 360 365
 Met Gly Thr Met Phe Ala Asn Leu Gly Gly Lys Leu Gln Ser Ser Glu
 370 375 380
 Met Lys Ser Ser Asn Asn Lys Ala Val Gly Ala Phe Phe Asn Gly Ile
 385 390 395 400
 Leu Ala Thr Leu Val Thr Thr Pro Cys Thr Gly Pro Phe Leu Gly Ser
 405 410 415
 Val Leu Gly Leu Val Met Ser Leu Ser Phe Leu Gln Gln Leu Leu Ile
 420 425 430
 Phe Thr Ala Ile Gly Leu Gly Met Ala Ser Pro Tyr Leu Val Phe Ser
 435 440 445
 Val Phe Pro Lys Met Leu Ser Val Leu Pro Lys Pro Gly Gly Trp Met
 450 455 460
 Ser Thr Phe Lys Gln Leu Thr Gly Phe Met Leu Leu Val Thr Val Thr
 465 470 475 480
 Trp Leu Val Trp Ile Phe Gly Ser Glu Thr Ser Thr Thr Ser Val Val
 485 490 495
 Val Leu Leu Gly Gly Leu Trp Leu Ala Gly Leu Gly Ala Trp Ile Leu
 500 505 510
 Gly Arg Trp Gly Thr Pro Val Ser Pro Lys Lys Gln Arg Val Cys Ala
 515 520 525
 Ser Leu Leu Phe Phe Ala Phe Leu Gly Gly Ala Ile Ser Val Ser Gly
 530 535 540
 Leu Ala Ser His Tyr Phe Ala Glu Pro Gln Gln Thr Val Ser Val Asn
 545 550 555 560
 Glu Asp Ser Leu Trp Gln Pro Phe Ser Leu Glu Lys Leu Ala Gln Leu
 565 570 575

Arg Ala Gln Gly Arg Pro Val Phe Val Asn Phe Thr Ala Lys Trp Cys
 580 585 590
 Leu Thr Cys Gln Met Asn Lys Pro Val Leu Tyr Gly Asp Ala Val Gln
 595 600 605
 Lys Met Phe Glu Thr His Gly Ile Val Thr Leu Glu Ala Asp Trp Thr
 610 615 620
 Arg Lys Asp Pro Gly Ile Thr Glu Glu Leu Ala Arg Leu Gly Arg Ala
 625 630 635 640
 Ser Val Pro Ser Tyr Val Tyr Tyr Pro Gly Asp Asn Ser Ala Pro Val
 645 650 655
 Val Leu Pro Xaa Lys Ile Thr Gln Asn Leu Leu Glu Asp Val Val Ser
 660 665 670
 Arg Phe Val Arg
 675

<210>837

<211>261

<212>PRT

<213>Chlamydia pneumoniae

<400>837

Val Asp Leu Ala Asp Ala His Val His Leu Ser Asp Asp Ala Phe Glu
 1 5 10 15
 Glu Asp Ile Asn Ser Val Leu Gln Arg Ala Gln Asp Ser Gly Val Ser
 20 25 30
 Leu Val Val Asn Val Thr Thr Thr Glu Lys Glu Leu Asn Arg Ser Phe
 35 40 45
 Ala Tyr Ala Glu Arg Phe Pro Lys Ile Arg Phe Cys His Val Gly Gly
 50 55 60
 Thr Pro Pro Gln Asp Val Asp Gln Asp Ile Glu Glu Asp Tyr Arg Asn
 65 70 75 80
 Phe His Ala Ala Ala His Ser Lys Lys Leu Ala Ala Ile Gly Glu Val
 85 90 95
 Gly Leu Asp Tyr Cys Phe Ala Thr Glu Glu Gly Ile Ala Arg Gln Lys
 100 105 110
 Glu Val Leu Gln Arg Tyr Leu Ala Leu Ser Leu Glu Cys Glu Leu Pro
 115 120 125
 Leu Val Val His Cys Arg Gly Ala Phe Asn Asp Phe Phe Arg Met Leu
 130 135 140
 Asp Gln Tyr Tyr His Asn Asp Pro Arg Ser Arg Pro Gly Met Leu His
 145 150 155 160
 Cys Phe Thr Gly Thr Leu Glu Glu Ala Gln Glu Leu Ile Ser Arg Gly
 165 170 175
 Trp Phe Ile Ser Ile Ser Gly Ile Val Thr Phe Lys Asn Ala Gln Asp
 180 185 190
 Leu Arg Asp Leu Val Val Glu Leu Pro Leu Glu His Leu Leu Ile Glu
 195 200 205
 Thr Asp Ala Pro Phe Leu Ala Pro Val Pro Tyr Arg Gly Lys Lys Asn
 210 215 220
 Glu Pro Ala His Val Leu His Thr Ile Asn Ala Val Ala Asn Val Lys
 225 230 235 240
 Gly Met Phe Pro Gln Glu Leu Ala Ala Leu Ala Tyr Lys Asn Val Leu
 245 250 255
 Arg Phe Leu His Gly
 260

<210>838 -

<211>297

<212>PRT

<213>Chlamydia pneumoniae

<400>838

Met Ser Arg His Glu Ile Cys Pro Glu Val Ser His Lys Lys Gly Lys
 1 5 10 15
 Tyr Tyr Ser Thr Phe Ile Phe Arg Cys Ile His Ser Leu Ala Gly Ile
 20 25 30
 Ala Phe Thr Phe Phe Leu Cys Glu His Leu Phe Thr Asn Met Leu Ala
 35 40 45

Ser Ser Tyr Phe Ser Gln Gly Lys Gly Phe Val Ala Met Val Asn Gly
 50 55 60
 Phe His Lys Ile Pro Gly Leu Lys Ile Ile Glu Val Ala Gly Leu Val
 65 70 75 80
 Leu Pro Phe Leu Cys His Ala Ile Ile Gly Ile Val Tyr Leu Phe Gln
 85 90 95
 Gly Lys Ser Asn Cys Tyr Ser Gly Asp Gly Ser Arg Pro His Leu Arg
 100 105 110
 Tyr Ala Lys Asn Tyr Ser Tyr Thr Trp Gln Arg Trp Thr Ala Trp Ile
 115 120 125
 Leu Leu Phe Gly Ile Ala Phe His Val Val His Leu Arg Phe Ile Arg
 130 135 140
 Tyr Pro Val His Val Asp Ile His Gly Thr Thr Tyr Tyr Ala Val Asp
 145 150 155 160
 Ile Gln Pro Ser Arg Tyr Asp Val Ile Val Arg Gly Thr Lys Gly Phe
 165 170 175
 Leu Thr Leu Asn Leu Pro Asn Thr Glu Ala Ser Ser Ile Glu Val Ser
 180 185 190
 Arg His Asp Leu Gly Gly Ala Asp Ala Ala Leu Leu Ser Glu Arg Asn
 195 200 205
 Ser Tyr Leu Leu Thr Pro Ser Ala Gly Thr Ala Phe Leu Tyr Val Val
 210 215 220
 Arg Asp Ala Leu Gly Ser Leu Phe Ile Ala Leu Leu Tyr Thr Ile Leu
 225 230 235 240
 Val Ile Ala Ala Ala Phe His Gly Phe Asn Gly Leu Trp Thr Phe Cys
 245 250 255
 Cys Arg Trp Gly Val Val Val Ser Leu Arg Met Gln Gly Val Leu Arg
 260 265 270
 Ile Val Cys Tyr Leu Ala Met Ile Val Val Thr Phe Met Gly Val Ser
 275 280 285
 Ala Val Trp Asn Leu Tyr Ser Val Ala
 290 295

<210>839

<211>626

<212>PRT

<213>Chlamydia pneumoniae

<400>839

Met Asp Glu Asn Arg Lys Val Ile Val Val Gly Gly Gly Leu Ala Gly
 1 5 10 15
 Leu Ser Ala Ala Met Gln Leu Ala Asn Leu Gly Ile Ile Val Glu Leu
 20 25 30
 Val Ser Leu Thr Lys Val Lys Arg Ser His Ser Val Cys Ala Gln Gly
 35 40 45
 Gly Ile Asn Ala Ala Leu Asn Leu Lys Pro Glu Glu Glu Asp Ser Pro
 50 55 60
 Tyr Val His Ala Tyr Asp Thr Ile Lys Gly Gly Asp Phe Leu Ala Asp
 65 70 75 80
 Gln Pro Pro Val Leu Glu Met Cys Leu Ala Ala Pro Arg Ile Ile Lys
 85 90 95
 Met Leu Asp Asn Phe Gly Cys Pro Phe Asn Arg Gly Pro Ser Gly Asn
 100 105 110
 Leu Asp Val Arg Arg Phe Gly Gly Thr Leu Tyr His Arg Thr Val Phe
 115 120 125
 Cys Gly Ala Ser Thr Gly Gln Gln Leu Met Tyr Thr Leu Asp Glu Gln
 130 135 140
 Val Arg Arg Arg Glu His Ala Gly Arg Val Ile Lys Arg Glu Asn His
 145 150 155 160
 Glu Phe Val Arg Leu Val Thr Asp His Ser Gly Arg Ala Cys Gly Ile
 165 170 175
 Ile Leu Met Asn Leu Phe Asn Asn Arg Leu Glu Ile Leu Arg Gly Asp
 180 185 190
 Ala Val Ile Ile Ala Thr Gly Gly Pro Gly Val Ile Phe Lys Met Ser
 195 200 205
 Thr Asn Ser Thr Phe Cys Thr Gly Ala Ala Asn Gly Arg Leu Phe Leu

210 215 220
 Gln Gly Met Ala Tyr Ala Asn Pro Glu Phe Ile Gln Ile His Pro Thr
 225 230 235 240
 Ala Ile Pro Gly Arg Asp Lys Leu Arg Leu Ile Ser Glu Ser Val Arg
 245 250 255
 Gly Glu Gly Gly Arg Val Trp Val Pro Gly Asp Ser Ser Lys Arg Ile
 260 265 270
 Val Phe Pro Asp Gly Ser Glu Arg Pro Cys Gly Glu Thr Gly Ala Pro
 275 280 285
 Trp Tyr Phe Leu Glu Asp Met Tyr Pro Ala Tyr Gly Asn Leu Val Ser
 290 295 300
 Arg Asp Val Gly Ala Arg Ala Ile Leu Arg Val Cys Glu Ala Gly Leu
 305 310 315 320
 Gly Ile Asp Gly Arg Met Glu Ala Tyr Leu Asp Val Thr His Leu Pro
 325 330 335
 Glu Lys Thr Arg His Lys Leu Glu Val Val Leu Asp Ile Tyr Lys Lys
 340 345 350
 Phe Thr Gly Glu Asp Pro Asn Thr Val Pro Met Arg Ile Phe Pro Ala
 355 360 365
 Val His Tyr Ser Met Gly Gly Ala Trp Val Asp Trp Pro Ala Ala Asp
 370 375 380
 Asp Pro Asp Arg Asp Ser Arg Phe Arg Gln Met Thr Asn Ile Pro Gly
 385 390 395 400
 Cys Phe Asn Cys Gly Glu Ser Asp Phe Gln Tyr His Gly Ala Asn Arg
 405 410 415
 Leu Gly Ala Asn Ser Leu Leu Ser Cys Leu Phe Ala Gly Leu Val Ser
 420 425 430
 Gly Asp Glu Ala Ser Arg Phe Ile Glu Ala Phe Gly Ala Ser Gln Ala
 435 440 445
 Thr Ser Ser Asp Phe Asp Arg Ala Leu Gln Gln Glu Lys Glu Glu Asn
 450 455 460
 Ala Arg Leu Leu Ser Ala Ser Gly Lys Glu Asn Ile Phe Val Leu His
 465 470 475 480
 Glu Glu Ile Ala Lys Ile Met Val Arg Asn Val Thr Val Lys Arg Asn
 485 490 495
 Asn Arg Asp Leu Gln Glu Thr Met Asp Lys Leu Lys Glu Phe Arg Glu
 500 505 510
 Arg Leu Lys Asn Val Ser Val Leu Asp Ser Ser Pro Phe Ala Asn Lys
 515 520 525
 Ser Phe His Phe Val Arg Gln Met Gly Pro Met Leu Glu Leu Ala Leu
 530 535 540
 Ala Ile Thr Lys Gly Ala Leu Leu Arg Asn Glu Phe Arg Gly Ser His
 545 550 555 560
 Tyr Lys Pro Glu Phe Pro Glu Arg Asp Asp Glu His Trp Leu Lys Thr
 565 570 575
 Thr Val Ala Val Tyr Ala Pro Glu Glu Pro Glu Ile Ser Tyr Leu Pro
 580 585 590
 Val Asp Thr Arg His Val Ala Pro Thr Leu Arg Asp Tyr Thr Lys Ser
 595 600 605
 Ser Thr Gly Lys Ile Glu Leu Thr Asn Ile Pro Asp Asn Ile Arg Leu
 610 615 620
 Pro Ile
 625
 <210>840
 <211>270
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>840
 Leu Ile Ile Ser Val Tyr Pro Tyr Arg Lys Arg Glu Met Met Glu Asn
 1 5 10 15
 Leu Glu Thr Phe Ile Leu Lys Ile Tyr Arg Gly Val Pro Gly Lys Gln
 20 25 30
 Tyr Trp Glu Ser Phe Glu Leu Pro Leu His Pro Gly Glu Asn Val Ile
 35 40 45

Ser Ala Leu Met Glu Ile Glu Lys Arg Pro Val Asn Ile Leu Gly Glu
 50 55 60
 Lys Val Asn-Pro Val Val Trp Glu Gln Gly Cys Leu Glu Glu Val Cys
 65 70 75 80
 Gly Ser Cys Ser Ile Leu Val Asn Gly Val Pro Arg Gln Ala Cys Thr
 85 90 95
 Ala Leu Ile Gln Glu Tyr Ile Asp Ala Thr Gln Ser Arg Glu Ile Val
 100 105 110
 Leu Ala Pro Leu Thr Lys Phe Pro Leu Ile Arg Asp Leu Ile Val Asp
 115 120 125
 Arg Ser Ile Met Phe Asp Asn Leu Glu Arg Ile Gln Gly Trp Val Ala
 130 135 140
 Ala Asp Ile Glu Gly Glu Thr Phe Gly Pro Gln Val Thr Gln Glu Gln
 145 150 155 160
 Gln Glu Leu Leu Tyr Ala Leu Ser Gln Cys Met Thr Cys Gly Cys Cys
 165 170 175
 Thr Glu Ala Cys Pro Gln Ile Asp Asn Lys Ser Asp Phe Ile Gly Pro
 180 185 190
 Ala Ala Ile Ser Gln Ala Arg Tyr Phe Asn Thr Tyr Pro Gly Asp Lys
 195 200 205
 Gln Ser Lys Lys Arg Trp Arg Ala Leu Met Gly Lys Gly Gly Ile Glu
 210 215 220
 Gly Cys Gly Gln Ala His Asn Cys Val Arg Val Cys Pro Lys Lys Leu
 225 230 235 240
 Pro Leu Thr Glu Ser Ile Ser Ala Val Gly Arg Glu Ile Ser Lys Phe
 245 250 255
 Ser Leu Arg Ser Leu Phe Ser Ala Leu Phe Lys Lys Lys Lys
 260 265 270

<210>841

<211>998

<212>PRT

<213>Chlamydia pneumoniae

<400>841

Thr Cys Leu Arg Ser Ser Arg Lys Ile Val Val Glu Asp Ile Ser Asp
 1 5 10 15
 Arg Asn Met Tyr Ser Cys Tyr Ser Lys Gly Ile Ser His Asn Tyr Leu
 20 25 30
 Leu His Pro Met Ser Arg Leu Asp Ile Phe Val Phe Asp Ser Leu Ile
 35 40 45
 Ala Asn Gln Asp Gln Asn Leu Leu Glu Glu Ile Phe Cys Ser Glu Asp
 50 55 60
 Thr Val Leu Phe Lys Ala Tyr Arg Thr Thr Ala Leu Gln Ser Pro Leu
 65 70 75 80
 Ala Ala Lys Asn Leu Asn Ile Ala Arg Lys Val Ala Asn Tyr Ile Leu
 85 90 95
 Ala Asp Asn Gly Glu Ile Asp Thr Val Lys Leu Val Glu Ala Ile His
 100 105 110
 His Leu Ser Gln Cys Thr Tyr Pro Leu Gly Pro His Arg His Asn Glu
 115 120 125
 Ala Gln Asp Arg Glu His Leu Leu Lys Met Leu Lys Ala Leu Lys Glu
 130 135 140
 Asn Pro Lys Leu Lys Glu Ser Ile Lys Thr Leu Phe Val Pro Ser Tyr
 145 150 155 160
 Ser Thr Ile Gln Asn Leu Ile Arg His Thr Leu Ala Leu Asn Pro Gln
 165 170 175
 Thr Ile Leu Ser Thr Ile His Val Arg Gln Ala Ala Leu Thr Ala Leu
 180 185 190
 Phe Thr Tyr Leu Arg Gln Asp Val Gly Ser Cys Phe Ala Thr Ala Pro
 195 200 205
 Ala Ile Leu Ile His Gln Glu Tyr Pro Glu Arg Phe Leu Lys Asp Leu
 210 215 220
 Asn Asp Leu Ile Ser Ser Gly Lys Leu Ser Arg Ile Val Asn Gln Arg
 225 230 235 240
 Glu Ile Ala Val Pro Ile Asn Leu Ser Gly Cys Ile Gly Glu Leu Phe

915

755	760	765
Glu Asn Phe Cys Asn Lys Tyr	Ala Leu Gln His Val	Val His Asp Phe
770	775	780
His Asp Phe Cys Ser Asp His Ser	Leu Thr Leu Pro Glu Leu Tyr Asp	
785	790	795
Lys Gly Ser Arg Phe Leu Ser Ser	Leu Phe Thr Lys Asp Lys Thr Val	800
805	810	815
Ala Leu Ile Tyr Ile Arg Arg Leu	Leu Tyr Leu Met Val Arg Glu Val	
820	825	830
Pro Tyr Val Ser Glu Gln Gln Leu	Pro Glu Val Leu Asp Asn Val Ser	
835	840	845
Ser Tyr Leu Gly Ile Ser Ser Arg	Ile Thr Tyr Glu Lys Phe Arg Ser	
850	855	860
Leu Ile Glu Glu Thr Ile Pro Lys	Met Thr Leu Leu Ser Ser Ala Asp	
865	870	875
Leu Arg His Ile Tyr Lys Gly Leu	Leu Met Gln Ser Tyr Gln Lys Ile	880
885	890	895
Tyr Thr Glu Glu Asp Thr Tyr Leu	Arg Leu Thr Thr Ala Met Arg His	
900	905	910
His Asn Leu Ala Tyr Pro Ala Pro	Leu Leu Phe Ala Asp Ser Asn Trp	
915	920	925
Pro Ser Ile Tyr Phe Gly Phe Ile	Leu Asn Pro Gly Thr Thr Glu Ile	
930	935	940
Asp Leu Trp Lys Phe Asn Tyr Ala	Gly Leu Gln Gly Gln Pro Leu Asp	
945	950	955
Asn Ile Gln Glu Leu Phe Ala Thr	Ser Arg Pro Trp Thr Leu Tyr Ala	960
965	970	975
Asn Pro Ile Asp Tyr Gly Met Pro	Pro Pro Pro Gly Tyr Arg Ser Arg	
980	985	990
Leu Pro Lys Glu Phe Phe		
995		

<210>842

<211>616

<212>PRT

<213>Chlamydia pneumoniae

<400>842

Arg His His Leu Ile Asn Ile Lys Gly Ile Ser Ile Met Lys His Thr	
1 5 10 15	
Phe Thr Lys Arg Val Leu Phe Phe Phe Phe Leu Val Ile Pro Ile Pro	
20 25 30	
Leu Leu Leu Asn Leu Met Val Val Gly Phe Phe Ser Phe Ser Ala Ala	
35 40 45	
Lys Ala Asn Leu Val Gln Val Leu His Thr Arg Ala Thr Asn Leu Ser	
50 55 60	
Ile Glu Phe Glu Lys Lys Leu Thr Ile His Lys Leu Phe Leu Asp Arg	
65 70 75 80	
Leu Ala Asn Thr Leu Ala Leu Lys Ser Tyr Ala Ser Pro Ser Ala Glu	
85 90 95	
Pro Tyr Ala Gln Ala Tyr Asn Glu Met Met Ala Leu Ser Asn Thr Asp	
100 105 110	
Phe Ser Leu Cys Leu Ile Asp Pro Phe Asp Gly Ser Val Arg Thr Lys	
115 120 125	
Asn Pro Gly Asp Pro Phe Ile Arg Tyr Leu Lys Gln His Pro Glu Met	
130 135 140	
Lys Lys Lys Leu Ser Ala Ala Val Gly Lys Ala Phe Leu Leu Thr Ile	
145 150 155 160	
Pro Gly Lys Pro Leu His Tyr Leu Ile Leu Val Glu Asp Val Ala	
165 170 175	
Ser Trp Asp Ser Thr Thr Thr Ser Gly Leu Leu Val Ser Phe Tyr Pro	
180 185 190	
Met Ser Phe Leu Gln Lys Asp Leu Phe Gln Ser Leu His Ile Thr Lys	
195 200 205	
Gly Asn Ile Cys Leu Val Asn Lys Tyr Gly Glu Val Leu Phe Cys Ala	
210 215 220	

Gln Asp Ser Glu Ser Ser Phe Val Phe Ser Leu Asp Leu Pro Asn Leu
 225 230 235 240
 Pro Gln Phe Gln Ala Arg Ser Pro Ser Ala Ile Glu Ile Glu Lys Ala
 245 250 255
 Ser Gly Ile Leu Gly Gly Glu Asn Leu Ile Thr Val Ser Ile Asn Lys
 260 265 270
 Lys Arg Tyr Leu Gly Leu Val Leu Asn Lys Ile Pro Ile Gln Gly Thr
 275 280 285
 Tyr Thr Leu Ser Leu Val Pro Val Ser Asp Leu Ile Gln Ser Ala Leu
 290 295 300
 Lys Val Pro Leu Asn Ile Cys Phe Phe Tyr Val Leu Ala Phe Leu Leu
 305 310 315 320
 Met Trp Trp Ile Phe Ser Lys Ile Asn Thr Lys Leu Asn Lys Pro Leu
 325 330 335
 Gln Glu Leu Thr Phe Cys Met Glu Ala Ala Trp Arg Gly Asn His Asn
 340 345 350
 Val Arg Phe Glu Pro Gln Pro Tyr Gly Tyr Glu Phe Asn Glu Leu Gly
 355 360 365
 Asn Ile Phe Asn Cys Thr Leu Leu Leu Leu Asn Ser Ile Glu Lys
 370 375 380
 Ala Asp Ile Asp Tyr His Ser Gly Glu Lys Leu Gln Lys Glu Leu Gly
 385 390 395 400
 Ile Leu Ser Ser Leu Gln Ser Ala Leu Leu Ser Pro Asp Phe Pro Thr
 405 410 415
 Phe Pro Lys Val Thr Phe Ser Ser Gln His Leu Arg Arg Arg Gln Leu
 420 425 430
 Ser Gly His Phe Asn Gly Trp Thr Val Gln Asp Gly Gly Asp Thr Leu
 435 440 445
 Leu Gly Ile Ile Gly Leu Ala Gly Asp Ile Gly Leu Pro Ser Tyr Leu
 450 455 460
 Tyr Ala Leu Ser Ala Arg Ser Leu Phe Leu Ala Tyr Ala Ser Ser Asp
 465 470 475 480
 Val Ser Leu Gln Lys Ile Ser Lys Asp Thr Ala Asp Ser Phe Ser Lys
 485 490 495
 Thr Thr Glu Gly Asn Glu Ala Val Val Ala Met Thr Phe Ile Lys Tyr
 500 505 510
 Val Glu Lys Asp Arg Ser Leu Glu Leu Leu Ser Leu Ser Glu Gly Ala
 515 520 525
 Pro Thr Met Phe Leu Gln Arg Gly Glu Ser Phe Val Arg Leu Pro Leu
 530 535 540
 Glu Thr His Gln Ala Leu Gln Pro Gly Asp Arg Leu Ile Cys Leu Thr
 545 550 555 560
 Gly Gly Glu Asp Ile Leu Lys Tyr Phe Ser Gln Leu Pro Ile Glu Glu
 565 570 575
 Leu Leu Lys Asp Pro Leu Asn Pro Leu Asn Thr Glu Asn Leu Ile Asp
 580 585 590
 Ser Leu Thr Met Met Leu Asn Asn Glu Thr Glu His Ser Ala Asp Gly
 595 600 605
 Thr Leu Thr Ile Leu Ser Phe Ser
 610 615
 <210>843
 <211>629
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>843
 Asn Asn Arg Val Pro Phe Val Val Cys Cys Ala Val Ala Ile Ile Ala
 1 5 10 15
 Pro Leu Gly Ile Asn Ile Val Trp Leu Asn Leu Asp Gln Tyr Arg Thr
 20 25 30
 Ile Val Ser Ala Ile Ser Thr Ala Leu Lys Glu Asn Ala Ala Phe Lys
 35 40 45
 Ala Asn Thr Leu Thr Gln Ile Val Pro Leu Asn Val Asp Val Leu Ser
 50 55 60
 Leu Phe Ser Asp Val Leu Asp Leu Asp Ala Gly Ile Pro Glu Thr Pro

65	70	75	80
Asn Val Leu Leu Ser Asn Glu Met Gln Lys Val Phe Gln Gly Ile Tyr			
	85	90	95
Asn Glu Ile Ser Leu Ile Lys Val Phe Pro Asn Gly Asp Lys Ile Val			
	100	105	110
Val Ala Ser Ser Ile Pro Glu His Leu Gly Glu Asn Tyr Asn His Lys			
	115	120	125
Ile Asp Ile Pro Lys Asn Thr Pro Phe Leu Ala Ala Leu Lys Gln Ser			
	130	135	140
Pro Lys Asn Gln Glu Val Phe Ser Val Met Gln Ala Asn Val Phe Asp			
	145	150	155
Ala Lys Thr Gln Glu Leu Gln Gly Ile Leu Tyr Thr Thr Phe Ser Ala			
	165	170	175
Glu Ser Leu Leu Lys Asp Leu Leu Ile Asn Lys Gln Ser Tyr Leu Thr			
	180	185	190
Val Lys Thr Ala Ile Leu Ser Lys Tyr Gly Val Ile Leu Lys Ala Ser			
	195	200	205
Asp Pro Ala Leu His Leu His Thr Val Tyr Pro Asp Met Thr Lys Glu			
	210	215	220
Lys Phe Cys Gln Val Phe Leu Asn Asp Asp Pro Cys Pro Ile Asp Ser			
	225	230	235
Glu Leu Gly Pro Leu Thr Leu Ser Pro Leu Asp Ile Gly Glu Asn Phe			
	245	250	255
Tyr Ser Phe Lys Ile Lys Asp Thr Glu Ile Trp Gly Cys Ile Glu Asn			
	260	265	270
Val Pro Ser Ile Asp Ile Ala Val Leu Ser Tyr Ala Lys Lys Glu Glu			
	275	280	285
Ser Phe Ala Pro Leu Trp Arg Arg Ala Arg Met Tyr Thr Ala Tyr Phe			
	290	295	300
Phe Cys Ile Leu Leu Gly Ser Leu Ile Ala Phe Ile Val Ala Arg Arg			
	305	310	315
Leu Ser Leu Pro Ile Arg Lys Leu Ala Thr Ala Met Ile Glu Ser Arg			
	325	330	335
Lys Asn Lys Asn Cys Leu Tyr Thr Asp Asp Ser Leu Gly Phe Glu Ile			
	340	345	350
Asn Arg Leu Gly His Ile Phe Asn Ala Met Val Glu Asn Leu His Lys			
	355	360	365
Gln Gln His Leu Ala Lys Thr Asn Phe Glu Met Lys Glu Asn Ala Gln			
	370	375	380
Asn Ala Leu His Leu Gly Glu Gln Ala Gln Gln Arg Leu Leu Pro Asn			
	385	390	395
Thr Leu Pro Ser Tyr Pro His Ile Glu Leu Ala Lys Ala Tyr Ile Pro			
	405	410	415
Ala Ile Thr Val Gly Gly Asp Phe Phe Asp Val Phe Val Val Gly Glu			
	420	425	430
Gly Ser Lys Ala Arg Leu Phe Leu Ile Val Ala Asp Ala Ser Gly Lys			
	435	440	445
Gly Val Asn Ala Cys Gly Tyr Ser Leu Phe Leu Lys Asn Met Leu Arg			
	450	455	460
Thr Phe Leu Ser Arg Ser Ser Ser Leu Gln Gln Ala Ile Gln Glu Thr			
	465	470	475
Ser Arg Leu Phe Tyr Asn Asn Thr Lys Asn Ser Gly Met Phe Val Thr			
	485	490	495
Leu Cys Val Tyr Cys Tyr His Gln Thr Ser Asn Thr Met Glu Tyr Tyr			
	500	505	510
Ser Cys Gly His Pro Pro Ala Cys Tyr Leu Asp Pro Asp Gly Glu Thr			
	515	520	525
Ser Trp Leu Phe His Pro Gly Met Ala Leu Gly Phe Leu Pro Glu Val			
	530	535	540
Ala Asn Ile Thr Ser Lys Leu Phe His Pro Lys Pro Gly Ser Leu Phe			
	545	550	555
Val Leu Tyr Ser Asp Gly Ile Thr Glu Ala His Asn Asn Asn Asn Asp			
	565	570	575
Met Phe Gly Glu Glu Arg Leu Gln Ala Ala Ile Gln Gly Leu Thr Gly			

580 585 590
 Lys Ser Ala Ala Asp Ala Val His Arg Leu Met Leu Ser Val Lys Thr
 595 600 605
 Phe Val Gly Asn Ser His Gln His Asp Asp Ile Thr Leu Leu Ile Leu
 610 615 620
 Lys Val Leu Ala Ser
 625
 <210>844
 <211>195
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>844
 Lys Ser Ser Lys His Arg Ser Phe Leu Leu Lys Lys Ser Gly Gly Asn
 1 5 10 15
 Gln Val Ser Leu Tyr Gln Lys Trp Trp Asn Ser Gln Leu Lys Lys Ser
 20 25 30
 Leu Cys Tyr Ser Thr Val Ala Ala Leu Ile Phe Met Ile Pro Ser Gln
 35 40 45
 Glu Ser Phe Ala Asp Ser Leu Ile Asp Leu Asn Leu Gly Leu Asp Pro
 50 55 60
 Ser Val Glu Cys Leu Ser Gly Asp Gly Ala Phe Ser Val Gly Tyr Phe
 65 70 75 80
 Thr Lys Ala Gly Ser Thr Pro Val Glu Tyr Gln Pro Phe Lys Tyr Asp
 85 90 95
 Val Ser Lys Lys Thr Phe Thr Ile Leu Ser Val Glu Thr Ala Asn Gln
 100 105 110
 Ser Gly Tyr Ala Tyr Gly Ile Ser Tyr Asp Gly Thr Ile Thr Val Gly
 115 120 125
 Thr Cys Ser Leu Gly Ala Gly Lys Tyr Asn Gly Ala Lys Trp Ser Ala
 130 135 140
 Asp Gly Thr Leu Thr Pro Leu Thr Gly Ile Thr Gly Gly Thr Ser His
 145 150 155 160
 Thr Glu Ala Arg Ala Ile Ser Lys Asp Thr Gln Val Ile Glu Gly Phe
 165 170 175
 Ser Tyr Asp Ala Ser Gly Gln Pro Lys Ala Val Gln Trp Ala Ser Gly
 180 185 190
 Gly Leu Gln
 195
 <210>845
 <211>115
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>845
 Cys Phe Arg Ala Thr Gln Gly Cys Ala Val Gly Lys Arg Arg Xaa Thr
 1 5 10 15
 Val Thr Gln Leu Ala Asp Ile Ser Gly Gly Ser Arg Ser Ser Tyr Ala
 20 25 30
 Tyr Ala Ile Ser Asp Asp Gly Thr Ile Ile Val Gly Ser Met Glu Ser
 35 40 45
 Thr Ile Thr Arg Lys Thr Thr Ala Val Lys Trp Val Asn Asn Val Pro
 50 55 60
 Thr Tyr Leu Gly Thr Leu Gly Gly Asp Ala Ser Thr Gly Leu Tyr Ile
 65 70 75 80
 Ser Gly Asp Gly Thr Val Ile Val Gly Ala Ala Asn Thr Ala Thr Val
 85 90 95
 Thr Asn Gly Asn Gln Glu Ser His Ala Tyr Met Tyr Lys Asp Asn Gln
 100 105 110
 Met Lys Asp
 115
 <210>846
 <211>182
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>846

Gly Thr Leu Gly Gly Ala Asn Ser Ser Ala Thr Gly Val Ser Ser Asp
 1 5 10 15
 Gly Ser Val Ile Val Gly Gln Ala Gln Thr Ala Asp Lys Ser Val His
 20 25 30
 Ala Phe Gln Tyr Tyr Asn Gly Glu Met Lys Asp Leu Gly Thr Leu Gly
 35 40 45
 Gly Thr Ser Ser Thr Ala Lys Thr Val Ser Pro Asp Gly Lys Val Ile
 50 55 60
 Met Gly Arg Ser Gln Ile Ala Asp Gly Ser Trp His Ala Phe Met Cys
 65 70 75 80
 His Thr Asp Phe Ser Ser Asn Asn Val Leu Phe Asp Leu Asp Asn Thr
 85 90 95
 Tyr Lys Thr Leu Arg Glu Asn Gly Arg Gln Leu Asn Ser Ile Phe Asn
 100 105 110
 Leu Gln Asn Met Met Leu Gln Arg Ala Ser Asp His Glu Phe Thr Glu
 115 120 125
 Phe Gly Arg Ser Asn Ile Ala Leu Gly Ala Gly Leu Tyr Val Asn Ala
 130 135 140
 Leu Gln Asn Leu Pro Ser Xaa Leu Ala Ala Gln Tyr Phe Gly Ile Ala
 145 150 155 160
 Tyr Lys Ile Arg Pro Lys Tyr Arg Leu Gly Val Phe Leu Asp His Asn
 165 170 175
 Phe Ser Ser His Val Ser
 180

<210>847

<211>244

<212>PRT

<213>Chlamydia pneumoniae

<400>847

Gln His Asn Ile Leu Glu Ser His Thr Lys Tyr Val Leu Asn Ile Val
 1 5 10 15
 Trp Gly Cys Phe Trp Thr Ile Ile Ser Ala Pro Thr Phe Pro Asn Asn
 20 25 30
 Phe Asn Val Ser His Asn Arg Leu Trp Met Gly Ala Phe Ile Gly Trp
 35 40 45
 Gln Asp Ser Asp Ala Leu Gly Ser Ser Val Lys Val Ser Phe Gly Tyr
 50 55 60
 Gly Lys Gln Lys Ala Thr Ile Thr Arg Glu Gln Leu Glu Asn Thr Glu
 65 70 75 80
 Ala Gly Ser Gly Glu Ser His Phe Glu Gly Val Ala Ala Gln Ile Glu
 85 90 95
 Gly Arg Tyr Gly Lys Ser Leu Gly Gly His Val Arg Val Gln Pro Phe
 100 105 110
 Leu Gly Leu Gln Phe Val His Ile Thr Arg Lys Glu Tyr Thr Glu Asn
 115 120 125
 Ala Val Gln Phe Pro Val His Tyr Asp Pro Ile Asp Tyr Ser Thr Gly
 130 135 140
 Val Val Tyr Leu Gly Ile Gly Ser His Ile Ala Leu Val Asp Ser Leu
 145 150 155 160
 His Val Gly Thr Arg Met Gly Met Glu Gln Asn Phe Ala Ala His Thr
 165 170 175
 Asp Arg Phe Ser Gly Ser Ile Ala Ser Ile Gly Asn Phe Val Phe Glu
 180 185 190
 Lys Leu Asp Val Thr His Thr Arg Ala Phe Ala Glu Met Arg Val Asn
 195 200 205
 Tyr Glu Leu Pro Tyr Leu Gln Ser Leu Asn Leu Ile Leu Arg Val Asn
 210 215 220
 Gln Gln Pro Leu Gln Gly Val Met Gly Phe Ser Ser Asp Leu Arg Tyr
 225 230 235 240
 Ala Leu Gly Phe

<210>848

<211>687

<212>PRT

<213>Chlamydia pneumoniae

<400>848

```

Ser Glu Leu Tyr Ser Ser Tyr Leu Gln Pro Cys Leu Asn Met Ser Ile
1      5      10      15
Val Arg Asn Ser Ala Leu Pro Leu Pro Cys Leu Ser Arg Ser Glu Thr
20      25      30
Phe Lys Lys Val Arg Ser His Met Lys Phe Met Lys Val Leu Thr Pro
35      40      45
Trp Ile Tyr Arg Lys Asp Leu Trp Val Thr Ala Phe Leu Leu Thr Ala
50      55      60
Ile Pro Gly Ser Phe Ala His Thr Leu Val Asp Ile Ala Gly Glu Pro
65      70      75      80
Arg His Ala Ala Gln Ala Thr Gly Val Ser Gly Asp Gly Lys Ile Val
85      90      95
Ile Gly Met Lys Val Pro Asp Asp Pro Phe Ala Ile Thr Val Gly Phe
100      105      110
Gln Tyr Ile Asp Gly His Leu Gln Pro Leu Glu Ala Val Arg Pro Gln
115      120      125
Cys Ser Val Tyr Pro Asn Gly Ile Thr Pro Asp Gly Thr Val Ile Val
130      135      140
Gly Thr Asn Tyr Ala Ile Gly Met Gly Ser Val Ala Val Lys Trp Val
145      150      155      160
Asn Gly Lys Val Ser Glu Leu Pro Met Leu Pro Asp Thr Leu Asp Ser
165      170      175
Val Ala Ser Ala Val Ser Ala Asp Gly Arg Val Ile Gly Gly Asn Arg
180      185      190
Asn Ile Asn Leu Gly Ala Ser Val Ala Val Lys Trp Glu Asp Asp Val
195      200      205
Ile Thr Gln Leu Pro Ser Leu Pro Asp Ala Met Asn Ala Cys Val Asn
210      215      220
Gly Ile Ser Ser Asp Gly Ser Ile Ile Val Gly Thr Met Val Asp Val
225      230      235      240
Ser Trp Arg Asn Thr Ala Val Gln Trp Ile Gly Asp Gln Leu Ser Val
245      250      255
Ile Gly Thr Leu Gly Gly Thr Thr Ser Val Ala Ser Ala Ile Ser Thr
260      265      270
Asp Gly Thr Val Ile Val Gly Gly Ser Glu Asn Ala Asp Ser Gln Thr
275      280      285
His Ala Tyr Ala Tyr Lys Asn Gly Val Met Ser Asp Ile Gly Thr Leu
290      295      300
Gly Gly Phe Tyr Ser Leu Ala His Ala Val Ser Ser Asp Gly Ser Val
305      310      315      320
Ile Val Gly Val Ser Thr Asn Ser Glu His Arg Tyr His Ala Phe Gln
325      330      335
Tyr Ala Asp Gly Gln Met Val Asp Leu Gly Thr Leu Gly Gly Pro Glu
340      345      350
Ser Tyr Ala Gln Gly Val Ser Gly Asp Gly Lys Val Ile Val Gly Arg
355      360      365
Ala Gln Val Pro Ser Gly Asp Trp His Ala Phe Leu Cys Pro Phe Gln
370      375      380
Ala Pro Ser Pro Ala Pro Val His Gly Gly Ser Thr Val Val Thr Ser
385      390      395      400
Gln Asn Pro Arg Gly Met Val Asp Ile Asn Ala Thr Tyr Ser Ser Leu
405      410      415
Lys Asn Ser Gln Gln Gln Leu Gln Arg Leu Leu Ile Gln His Ser Ala
420      425      430
Lys Val Glu Ser Val Ser Ser Gly Ala Pro Ser Phe Thr Ser Val Lys
435      440      445
Gly Ala Ile Ser Lys Gln Ser Pro Ala Val Gln Asn Asp Val Gln Lys
450      455      460
Gly Thr Phe Leu Ser Tyr Arg Ser Gln Val His Gly Asn Val Gln Asn
465      470      475      480
Gln Gln Leu Leu Thr Gly Ala Phe Met Asp Trp Lys Leu Ala Ser Ala
485      490      495

```

Pro Lys Cys Gly Phe Lys Val Ala Leu His Tyr Gly Ser Gln Asp Ala
 500 505 510
 Leu Val Glu Arg Ala Ala Leu Pro Tyr Thr Glu Gln Gly Leu Gly Ser
 515 520 525
 Ser Val Leu Ser Gly Phe Gly Gly Gln Val Gln Gly Arg Tyr Asp Phe
 530 535 540
 Asn Leu Gly Glu Thr Val Val Leu Gln Pro Phe Met Gly Ile Gln Val
 545 550 555 560
 Leu His Leu Ser Arg Glu Gly Tyr Ser Glu Lys Asn Val Arg Phe Pro
 565 570 575
 Val Ser Tyr Asp Ser Val Ala Tyr Ser Ala Ala Thr Ser Phe Met Gly
 580 585 590
 Ala His Val Phe Ala Ser Leu Ser Pro Lys Met Ser Thr Ala Ala Thr
 595 600 605
 Leu Gly Val Glu Arg Asp Leu Asn Ser His Ile Asp Glu Phe Lys Gly
 610 615 620
 Ser Val Ser Ala Met Gly Asn Phe Val Leu Glu Asn Ser Thr Val Ser
 625 630 635 640
 Val Leu Arg Pro Phe Ala Ser Leu Ala Met Tyr Tyr Asp Val Arg Gln
 645 650 655
 Gln Gln Leu Val Thr Leu Ser Val Val Met Asn Gln Gln Pro Leu Thr
 660 665 670
 Gly Thr Leu Ser Leu Val Ser Gln Ser Ser Tyr Asn Leu Ser Phe
 675 680 685

<210>849

<211>228

<212>PRT

<213>Chlamydia pneumoniae

<400>849

Val Leu Ile Leu Thr Trp Ile Asn Val Leu Thr Lys Leu Gly Leu Asn
 1 5 10 15
 Met Ser Lys Lys Ile Lys Val Leu Gly His Leu Thr Leu Cys Thr Leu
 20 25 30
 Phe Arg Gly Val Leu Cys Ala Ala Ala Leu Ser Asn Ile Gly Tyr Ala
 35 40 45
 Ser Thr Ser Gln Glu Ser Pro Tyr Gln Lys Ser Ile Glu Asp Trp Lys
 50 55 60
 Gly Tyr Thr Phe Thr Asp Leu Glu Leu Leu Ser Lys Glu Gly Trp Ser
 65 70 75 80
 Glu Ala His Ala Ile Ser Gly Asn Gly Ser Arg Ile Val Gly Ala Ser
 85 90 95
 Gly Ala Gly Gln Gly Ser Val Thr Ala Val Ile Trp Glu Ser His Leu
 100 105 110
 Ile Lys His Leu Gly Thr Leu Gly Gly Glu Ala Ser Ser Ala Glu Gly
 115 120 125
 Ile Ser Asn Asp Gly Glu Val Val Val Gly Trp Ser Asp Thr Arg Glu
 130 135 140
 Gly Tyr Thr His Ala Phe Val Phe Asp Gly Arg Asp Met Lys Asp Leu
 145 150 155 160
 Gly Thr Leu Gly Ala Thr Tyr Ser Val Ala Arg Gly Val Ser Gly Asp
 165 170 175
 Gly Ser Ile Ile Val Gly Val Ser Ala Thr Ala Arg Gly Glu Asp Tyr
 180 185 190
 Gly Met Ala Ser Trp Cys Gln Val Gly Lys Arg Glu Asn Gln Thr Ile
 195 200 205
 Glu Val Val Ala Ser Arg Ser Leu Gly Leu Arg Arg Met Gln Ser Leu
 210 215 220
 Arg Met Val Arg
 225

<210>850

<211>173

<212>PRT

<213>Chlamydia pneumoniae

<400>850

Ser Cys Cys Leu Lys Val Ser Gly Ser Glu Ala Asn Ala Ile Ser Glu
 1 5 10 15
 Asp Gly Thr Val Ile Val Gly Arg Gly Glu Ile Ser Arg Asn His Ile
 20 25 30
 Val Ala Val Lys Trp Asn Lys Asn Ala Val Tyr Ser Leu Gly Thr Leu
 35 40 45
 Gly Gly Ser Val Ala Ser Ala Glu Ala Ile Ser Ala Asn Gly Lys Val
 50 55 60
 Ile Val Gly Trp Ser Thr Thr Asn Asn Gly Glu Thr His Ala Phe Met
 65 70 75 80
 His Lys Asp Glu Thr Met His Asp Leu Gly Thr Leu Gly Gly Gly Phe
 85 90 95
 Ser Val Ala Thr Gly Val Ser Ala Asp Gly Arg Ala Ile Val Gly Phe
 100 105 110
 Ser Ala Val Lys Thr Gly Glu Ile His Ala Phe Tyr Tyr Ala Glu Gly
 115 120 125
 Glu Met Glu Asp Leu Thr Thr Leu Gly Gly Glu Glu Ala Arg Val Phe
 130 135 140
 Asp Ile Ser Ser Glu Gly Asn Asp Ile Ile Gly Ser Ile Lys Thr Asp
 145 150 155 160
 Ala Gly Ala Glu Arg Ala Tyr Leu Phe His Ile His Lys
 165 170

<210>851

<211>349

<212>PRT

<213>Chlamydia pneumoniae

<400>851

Val Val Phe Glu Ile Ile Phe Val Val Arg Val Pro Met Lys Lys Thr
 1 5 10 15
 Cys Cys Gln Asn Tyr Arg Ser Ile Gly Val Val Phe Ser Val Val Leu
 20 25 30
 Phe Val Leu Thr Thr Gln Thr Leu Phe Ala Gly His Phe Ile Asp Ile
 35 40 45
 Gly Thr Ser Gly Leu Tyr Ser Trp Ala Arg Gly Val Ser Gly Asp Gly
 50 55 60
 Arg Val Val Val Gly Tyr Glu Gly Gly Asn Ala Phe Lys Tyr Val Asp
 65 70 75 80
 Gly Glu Lys Phe Leu Leu Glu Gly Leu Val Pro Arg Ser Glu Ala Leu
 85 90 95
 Val Phe Lys Ala Ser Tyr Asp Gly Ser Val Ile Ile Gly Ile Ser Asp
 100 105 110
 Gln Asp Pro Ser Cys Arg Ala Val Lys Trp Val Asn Gly Ala Leu Val
 115 120 125
 Asp Leu Gly Ile Phe Ser Glu Gly Met Gln Ser Phe Ala Glu Gly Val
 130 135 140
 Ser Ser Asp Gly Lys Thr Ile Val Gly Cys Leu Tyr Ser Asp Asp Thr
 145 150 155 160
 Glu Thr Asn Phe Ala Val Lys Trp Asp Glu Thr Gly Met Val Val Leu
 165 170 175
 Pro Asn Leu Pro Glu Asp Arg His Ser Cys Ala Trp Asp Ala Ser Glu
 180 185 190
 Asp Gly Ser Val Ile Val Gly Asp Ala Met Gly Ser Glu Ile Ala
 195 200 205
 Lys Ala Val Tyr Trp Lys Asp Gly Glu Gln His Leu Leu Ser Asn Ile
 210 215 220
 Pro Gly Ala Lys Arg Ser Ser Ala His Ala Val Ser Lys Asp Gly Ser
 225 230 235 240
 Phe Ile Val Gly Glu Phe Ile Ser Glu Glu Asn Glu Val His Ala Phe
 245 250 255
 Val Tyr His Asn Gly Val Ile Lys Asp Ile Gly Thr Leu Gly Gly Asp
 260 265 270
 Tyr Ser Val Ala Thr Gly Val Ser Arg Asp Gly Lys Val Ile Val Gly
 275 280 285
 His Ser Thr Arg Thr Asp Gly Glu Tyr Arg Ala Phe Lys Tyr Val Asp

290 295 300
 Gly Arg Met Ile Asp Leu Gly Thr Leu Gly Gly Ser Ala Ser Phe Ala
 305 310 315 320
 Phe Gly Val Ser Asp Asp Gly Lys Thr Ile Val Gly Lys Phe Glu Thr
 325 330 335
 Glu Leu Gly Glu Cys His Ala Phe Ile Tyr Leu Asp Asp
 340 345
 <210>852
 <211>354
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>852
 Lys Arg Glu Glu Asn Met Ala Ala Ile Lys Gln Ile Leu Arg Ser Met
 1 5 10 15
 Leu Ser Gln Ser Ser Leu Trp Met Val Leu Phe Ser Leu Tyr Ser Leu
 20 25 30
 Ser Gly Tyr Cys Tyr Val Ile Thr Asp Lys Pro Glu Asp Asp Phe His
 35 40 45
 Ser Ser Ser Ala Val Lys Trp Asp His Trp Gly Lys Thr Thr Leu Ser
 50 55 60
 Arg Leu Ser Asn Lys Lys Ala Ser Ala Lys Ala Val Ser Gly Thr Gly
 65 70 75 80
 Ala Thr Thr Val Gly Phe Ile Lys Asp Thr Trp Ser Arg Thr Tyr Ala
 85 90 95
 Val Arg Trp Asn Tyr Trp Gly Thr Lys Glu Leu Pro Thr Ser Ser Trp
 100 105 110
 Val Lys Lys Ser Lys Ala Thr Gly Ile Ser Ser Asp Gly Ser Ile Ile
 115 120 125
 Ala Gly Ile Val Glu Asn Glu Leu Ser Gln Ser Phe Ala Val Thr Trp
 130 135 140
 Lys Asn Asn Glu Met Tyr Leu Leu Pro Ser Thr Trp Ala Val Gln Ser
 145 150 155 160
 Lys Ala Tyr Gly Ile Ser Ser Asp Gly Ser Val Ile Val Gly Ser Ala
 165 170 175
 Lys Asp Ala Trp Ser Arg Thr Phe Ala Val Lys Trp Thr Gly His Glu
 180 185 190
 Ala Gln Val Leu Pro Val Gly Trp Ala Val Lys Ser Val Ala Asn Ser
 195 200 205
 Val Ser Ala Asn Gly Ser Ile Ile Val Gly Ser Val Gln Asp Ala Ser
 210 215 220
 Gly Ile Leu Tyr Ala Val Lys Trp Glu Gly Asn Thr Ile Thr His Leu
 225 230 235 240
 Gly Thr Leu Gly Gly Tyr Ser Ala Ile Ala Lys Ala Val Ser Asn Asn
 245 250 255
 Gly Lys Val Ile Val Gly Arg Ser Glu Thr Tyr Tyr Gly Glu Val His
 260 265 270
 Ala Phe Cys His Lys Asn Gly Val Met Ser Asp Leu Gly Thr Leu Gly
 275 280 285
 Gly Ser Tyr Ser Ala Ala Lys Gly Val Ser Ala Thr Gly Lys Val Ile
 290 295 300
 Val Gly Met Ser Thr Thr Ala Asn Gly Lys Leu His Ala Phe Lys Tyr
 305 310 315 320
 Val Gly Gly Arg Met Ile Asp Leu Gly Glu Tyr Ser Trp Lys Glu Ala
 325 330 335
 Cys Ala Asn Ala Val Ser Ile Asp Gly Glu Ile Ile Val Gly Val Gln
 340 345 350
 Ser Glu
 <210>853
 <211>452
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>853
 Met Phe Glu Ala Val Ile Ala Asp Ile Gln Ala Arg Glu Ile Leu Asp

1 5 10 15
 Ser Arg Gly Tyr Pro Thr Leu His Val Lys Val Thr Thr Ser Thr Gly
 20 25 30
 Ser Val Gly Glu Ala Arg Val Pro Ser Gly Ala Ser Thr Gly Lys Lys
 35 40 45
 Glu Ala Leu Glu Phe Arg Asp Thr Asp Ser Pro Arg Tyr Gln Gly Lys
 50 55 60
 Gly Val Leu Gln Ala Val Lys Asn Val Lys Glu Ile Leu Phe Pro Leu
 65 70 75 80
 Val Lys Gly Cys Ser Val Tyr Glu Gln Ser Leu Ile Asp Ser Leu Met
 85 90 95
 Met Asp Ser Asp Gly Ser Pro Asn Lys Glu Thr Leu Gly Ala Asn Ala
 100 105 110
 Ile Leu Gly Val Ser Leu Ala Thr Ala His Ala Ala Ala Thr Leu
 115 120 125
 Arg Arg Pro Leu Tyr Arg Tyr Leu Gly Gly Cys Phe Ala Cys Ser Leu
 130 135 140
 Pro Cys Pro Met Met Asn Leu Ile Asn Gly Gly Met His Ala Asp Asn
 145 150 155 160
 Gly Leu Gly Phe Gln Glu Phe Met Ile Arg Pro Ile Gly Ala Ser Ser
 165 170 175
 Ile Lys Glu Ala Val Asn Met Gly Ala Asp Val Phe His Thr Leu Lys
 180 185 190
 Lys Leu Leu His Glu Arg Gly Leu Ser Thr Gly Val Gly Asp Glu Gly
 195 200 205
 Gly Phe Ala Pro Asn Leu Ala Ser Asn Glu Glu Ala Leu Glu Leu Leu
 210 215 220
 Leu Leu Ala Ile Glu Lys Ala Gly Phe Thr Pro Gly Lys Asp Ile Ser
 225 230 235 240
 Leu Ala Leu Asp Cys Ala Ala Ser Ser Phe Tyr Asn Val Lys Thr Gly
 245 250 255
 Thr Tyr Asp Gly Arg His Tyr Glu Glu Gln Ile Ala Ile Leu Ser Asn
 260 265 270
 Leu Cys Asp Arg Tyr Pro Ile Asp Ser Ile Glu Asp Gly Leu Ala Glu
 275 280 285
 Glu Asp Tyr Asp Gly Trp Ala Leu Leu Thr Glu Val Leu Gly Glu Lys
 290 295 300
 Val Gln Ile Val Gly Asp Asp Leu Phe Val Thr Asn Pro Glu Leu Ile
 305 310 315 320
 Leu Glu Gly Ile Ser Asn Gly Leu Ala Asn Ser Val Leu Ile Lys Pro
 325 330 335
 Asn Gln Ile Gly Thr Leu Thr Glu Thr Val Tyr Ala Ile Lys Leu Arg
 340 345 350
 Lys Trp Leu Ala Ile Leu Gln Leu Phe Leu Ile Ala Gln Glu Lys Leu
 355 360 365
 Arg Thr Leu Arg Leu Gln Ile Leu Leu Leu Pro Ser Thr Leu Val Lys
 370 375 380
 Ser Lys Gln Ala Leu Tyr His Val Leu Ser Val Leu Gln Asn Thr Ile
 385 390 395 400
 Asp Ser Trp Lys Leu Lys Lys Ser Leu Asp Pro Lys Gln Phe Ser Gln
 405 410 415
 Ile Leu Met Tyr Phe Leu Thr Arg Ile Leu Arg Asn Arg Gly Ile Phe
 420 425 430
 Ser Ile Ser Ile Leu Ser Pro Asn Gln Glu Tyr Ile Ala Asp Leu Trp
 435 440 445
 Ala Leu Ser Phe
 450
 <210>854
 <211>84
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>854
 Asn Ser Val Cys Tyr Gln Val Ala Gln Met Ala Gly Tyr Thr Thr Ile
 1 5 10 15

Ile Ser His Arg Ser Gly Glu Thr Thr Asp Thr Thr Ile Ala Asp Leu
 20 25 30
 Ala Val Ala Phe Asn Ala Gly Gln Ile Lys Thr Gly Ser Leu Ser Arg
 35 40 45
 Ser Glu Arg Val Ala Lys Tyr Asn Arg Leu Met Glu Ile Glu Glu Glu
 50 55 60
 Leu Gly Ser Glu Ala Ile Phe Thr Asp Ser Asn Val Phe Ser Tyr Glu
 65 70 75 80
 Asp Ser Glu Glu

<210>855

<211>285

<212>PRT

<213>Chlamydia pneumoniae

<400>855

Pro Phe Glu Glu Ala Gln Lys Tyr Phe Arg Lys Val Ile Tyr Val Ser
 1 5 10 15
 Ala Thr Pro Gly Asp Thr Glu Val Gln Glu Ser Ser Gly His Ile Val
 20 25 30
 Gln Gln Ile Ile Arg Pro Thr Gly Ile Pro Asp Pro Met Pro Glu Ile
 35 40 45
 Arg Pro Ala Thr Gly Gln Val Asp Asp Leu Leu Glu Glu Ile Arg Leu
 50 55 60
 Arg Leu Ser Gln Lys His Glu Lys Ile Leu Val Ile Ser Ile Thr Lys
 65 70 75 80
 Lys Leu Ala Glu Asp Met Ala Gly Phe Leu Ser Glu Leu Glu Ile Pro
 85 90 95
 Ala Ala Tyr Leu His Ser Gly Ile Glu Thr Ala Glu Arg Thr Gln Ile
 100 105 110
 Leu Thr Asp Leu Arg Ser Gly Val Ile Asp Val Leu Ile Gly Val Asn
 115 120 125
 Leu Leu Arg Glu Gly Leu Asp Leu Pro Glu Val Ser Leu Val Ala Ile
 130 135 140
 Leu Asp Ala Asp Lys Glu Gly Phe Leu Arg Ser Thr Ser Ser Leu Ile
 145 150 155 160
 Gln Phe Cys Gly Arg Ala Ala Arg Asn Ile Asn Gly Lys Val Ile Phe
 165 170 175
 Tyr Ala Asp Gln Lys Thr Arg Ser Ile Glu Glu Thr Leu Arg Glu Thr
 180 185 190
 Glu Arg Arg Arg Gln Ile Gln Leu Asp Tyr Asn Lys Glu His Asn Ile
 195 200 205
 Val Pro Lys Pro Ile Ile Lys Ala Ile Phe Ala Asn Pro Ile Leu Gln
 210 215 220
 Thr Ser Lys Asp Ser Glu Ser Pro Lys Glu Ser Gln Arg Pro Leu Ser
 225 230 235 240
 Lys Glu Asp Leu Glu Glu Gln Ile Lys Lys Tyr Glu Ala Leu Met Gln
 245 250 255
 Arg Ala Ala Lys Glu Phe Arg Phe Asn Glu Ala Ala Lys Tyr Arg Asp
 260 265 270
 Ala Met Gln Ala Cys Lys Glu Gln Leu Leu Tyr Leu Phe
 275 280 285

<210>856

<211>372

<212>PRT

<213>Chlamydia pneumoniae

<400>856

Ile Ile Phe Thr Met Thr Phe Gln Leu His Ala Pro Phe Ala Pro Cys
 1 5 10 15
 Gly Asp Gln Pro Glu Ala Ile Ala Arg Leu Ser Ala Gly Val Arg Asn
 20 25 30
 Gln Val Lys Ser Gln Val Leu Leu Gly Thr Thr Gly Ser Gly Lys Thr
 35 40 45
 Phe Thr Ile Ala Asn Val Val Ala Asn Val Asn Leu Pro Thr Leu Val
 50 55 60

Leu Ala His Asn Lys Thr Leu Ala Ala Gln Leu Tyr Gln Glu Phe Arg
 65 70 75 80
 Glu Phe Phe Pro Asn Asn Ala Val Glu Tyr Phe Ile Ser Tyr Tyr Asp
 85 90 95
 Tyr Tyr Gln Pro Glu Ala Tyr Ile Ala Arg Ser Asp Thr Tyr Ile Glu
 100 105 110
 Lys Ser Leu Leu Ile Asn Asp Glu Ile Asp Lys Leu Arg Leu Ser Ala
 115 120 125
 Thr Arg Ser Ile Leu Glu Arg Arg Asp Thr Leu Ile Val Ser Ser Val
 130 135 140
 Ser Cys Ile Tyr Gly Ile Gly Ser Pro Glu Asn Tyr Thr Ser Met Ala
 145 150 155 160
 Leu Val Leu Glu Val Gly Lys Glu Tyr Pro Arg Asn Ile Leu Thr Ala
 165 170 175
 Gln Leu Val Lys Met His Tyr Gln Ala Ser Pro Ile Pro Gln Arg Ser
 180 185 190
 Ala Phe Arg Glu Arg Gly Ser Val Ile Asp Ile Phe Pro Ala Tyr Glu
 195 200 205
 Ser Glu Leu Ala Leu Arg Leu Glu Phe Leu Asn Asp Thr Leu Thr Ser
 210 215 220
 Ile Glu Tyr Ser Asp Pro Leu Thr Met Ile Pro Lys Glu Ser Val Pro
 225 230 235 240
 Ser Ala Thr Leu Tyr Pro Gly Ser His Tyr Val Ile Pro Glu Ala Ile
 245 250 255
 Arg Glu Gln Ala Ile Arg Thr Ile Gln Glu Glu Leu Glu Glu Arg Met
 260 265 270
 Ala Phe Phe Asp Asp Arg Pro Ile Glu Lys Asp Arg Ile Phe His Arg
 275 280 285
 Thr Thr His Asp Ile Glu Met Ile Lys Glu Ile Gly Phe Cys Lys Gly
 290 295 300
 Ile Glu Asn Tyr Ser Arg His Phe Thr Gly Ala Pro Pro Gly Ala Pro
 305 310 315 320
 Pro Thr Cys Leu Leu Asp Tyr Phe Pro Glu Asp Phe Leu Leu Ile Ile
 325 330 335
 Asp Glu Ser His Gln Thr Leu Pro Gln Ile Arg Ala Met Tyr Arg Gly
 340 345 350
 Asp Gln Ser Arg Lys Gln Ser Leu Val Glu Tyr Gly Phe Arg Phe Pro
 355 360 365
 Ser Gly Leu Arg
 370

<210>857

<211>344

<212>PRT

<213>Chlamydia pneumoniae

<400>857

Met Asn Lys Lys Lys Arg Val Leu Thr Gly Asp Arg Pro Thr Gly Lys
 1 5 10 15
 Leu His Leu Gly His Trp Val Gly Ser Ile Lys Asn Arg Leu Glu Leu
 20 25 30
 Gln Asn Ser Pro Glu Tyr Asp Cys Phe Phe Ile Ile Ala Asp Leu His
 35 40 45
 Thr Leu Thr Thr Lys Ile Arg Lys Glu Glu Val Leu Asp Val Asp Asn
 50 55 60
 His Ile Tyr Glu Val Leu Ala Asp Trp Leu Ser Val Gly Ile Asp Pro
 65 70 75 80
 Thr Lys Ser Ile Ile Tyr Leu Gln Ser Ala Ile Pro Glu Ile Tyr Glu
 85 90 95
 Leu His Leu Leu Phe Ser Met Leu Ile Ser Ile Asn Arg Val Met Gly
 100 105 110
 Ile Pro Ser Leu Lys Asp Met Ala Arg Asn Ala Ser Ile Glu Glu Gly
 115 120 125
 Ser Leu Ser Tyr Gly Leu Ile Gly Tyr Pro Ile Leu Gln Ser Ala Asp
 130 135 140
 Ile Leu Leu Ala Lys Ala Gln Phe Val Pro Val Gly Lys Asp Asn Glu

145 150 155 160
 Ala His Val Glu Leu Thr Arg Asp Ile Ala Arg Asn Phe Asn Arg Leu
 165 170 175
 Tyr Gly Gln Val Phe Pro Glu Pro Glu Val Leu Gln Gly Glu Leu Thr
 180 185 190
 Ser Leu Val Gly Ile Asp Gly Gln Gly Lys Met Ser Lys Ser Ala Asn
 195 200 205
 Asn Ala Ile Tyr Leu Ser Asp Ser Asp Ala Thr Ile Thr Glu Lys Val
 210 215 220
 Arg Lys Met Tyr Thr Asp Pro Asn Arg Ile Arg Ala Thr Thr Pro Gly
 225 230 235 240
 Arg Val Glu Gly Asn Pro Leu Phe Ile Tyr His Asp Ile Phe Asn Pro
 245 250 255
 His Lys Asp Glu Val Glu Glu Phe Lys Ala Arg Tyr Arg Gln Gly Cys
 260 265 270
 Ile Lys Asp Ile Glu Val Lys Ala Arg Leu Ala Glu Glu Leu Ile His
 275 280 285
 Phe Leu Lys Pro Ile Lys Glu Arg Arg Ser Glu Phe Leu Ser Lys Pro
 290 295 300
 Leu Ala Leu Gln Asn Val Leu Glu Asp Gly Thr His Lys Met Arg Glu
 305 310 315 320
 Val Ala Lys Val Thr Met Glu Glu Val His Asp Lys Phe Gly Phe Ser
 325 330 335
 His Lys Trp Arg Ser Leu Leu Lys
 340

<210>858

<211>185

<212>PRT

<213>Chlamydia pneumoniae

<400>858

Phe Met Ala Ala Lys Thr Lys Thr Leu Glu Leu Glu Asp Asn Val Phe
 1 5 10 15
 Leu Leu Leu Glu Gly Asn Leu Lys Arg Ile Phe Ala Thr Pro Ile Gly
 20 25 30
 Tyr Thr Thr Phe Arg Glu Phe Gln Asn Val Val Phe Asn Cys Ala Asn
 35 40 45
 Gly Gln Gln Glu Ile Ala Asn Phe Phe Phe Glu Met Leu Ile Asn Gly
 50 55 60
 Lys Leu Thr Gln Glu Leu Ala Pro Gln Gln Lys Gln Ala Ala His Ser
 65 70 75 80
 Leu Ile Ala Glu Phe Met Met Pro Ile Arg Val Ala Lys Asp Ile His
 85 90 95
 Glu Arg Gly Glu Phe Ile Asn Phe Ile Thr Ser Asp Met Leu Thr Gln
 100 105 110
 Gln Glu Arg Cys Ile Phe Leu Asn Arg Leu Ala Arg Val Asp Gly Gln
 115 120 125
 Glu Phe Leu Leu Met Thr Asp Val Gln Asn Thr Cys His Leu Ile Arg
 130 135 140
 His Leu Leu Ala Arg Leu Leu Glu Ala Gln Lys Asn Pro Val Gly Glu
 145 150 155 160
 Lys Asn Leu Gln Glu Ile Gln Glu Glu Ile Thr Ser Leu Lys Asn His
 165 170 175
 Phe Asp Glu Leu Thr Lys Ala Leu Gln
 180 185

<210>859

<211>250

<212>PRT

<213>Chlamydia pneumoniae

<400>859

Met Gly Asn Leu Lys Thr Leu Leu Glu Ser Arg Phe Lys Lys Asn Thr
 1 5 10 15
 Pro Thr Lys Met Glu Ala Leu Ala Arg Lys Arg Met Glu Gly Asp Pro
 20 25 30
 Ser Pro Leu Ala Val Arg Leu Ser Asn Pro Thr Leu Ser Ser Lys Glu

PCT/IB98/01890

```
<210>860
<211>255
<212>PRT
<213>Chlamydia pneumoniae
<400>860
```

Met	Lys	Thr	Ile	Ala	Val	Asn	Ser	Phe	Lys	Gly	Gly	Thr	Ala	Lys	Thr
1				5					10					15	
Ser	Thr	Thr	Leu	His	Leu	Gly	Ala	Ala	Leu	Ala	Gln	Tyr	His	Gln	Ala
			20					25					30		
Arg	Val	Leu	Leu	Ile	Asp	Phe	Asp	Ala	Gln	Ala	Asn	Leu	Thr	Ser	Gly
		35					40					45			
Leu	Gly	Leu	Asp	Pro	Asp	Cys	Tyr	Asp	Ser	Leu	Ala	Val	Val	Leu	Gln
	50					55					60				
Gly	Glu	Lys	Glu	Ile	Gln	Glu	Val	Ile	Arg	Pro	Ile	Gln	Asp	Thr	Gln
65					70					75					80
Leu	Asp	Leu	Ile	Pro	Ala	Asp	Thr	Trp	Leu	Glu	Arg	Ile	Glu	Val	Ser
				85					90					95	
Gly	Asn	Leu	Ala	Ala	Asp	Arg	Tyr	Ser	His	Glu	Arg	Leu	Lys	Tyr	Val
			100					105					110		
Leu	Gly	Ser	Val	Gln	Asp	Lys	Tyr	Asp	Tyr	Val	Ile	Ile	Asp	Thr	Pro
		115					120					125			
Pro	Ser	Leu	Cys	Trp	Leu	Thr	Glu	Ser	Ala	Leu	Ile	Ala	Ala	Asp	Tyr
		130				135						140			
Ala	Leu	Ile	Cys	Ala	Thr	Pro	Glu	Phe	Tyr	Ser	Val	Lys	Gly	Leu	Glu
145					150					155					160
Arg	Leu	Ala	Gly	Phe	Ile	Gln	Gly	Ile	Ser	Ala	Arg	His	Pro	Leu	Thr
				165					170					175	
Ile	Leu	Gly	Val	Ala	Leu	Ser	Phe	Trp	Asn	Cys	Arg	Gly	Lys	Asn	Asn
			180					185					190		
Ser	Ala	Phe	Ala	Glu	Leu	Ile	His	Lys	Thr	Phe	Pro	Gly	Lys	Leu	Leu
		195					200					205			
Asn	Thr	Lys	Ile	Arg	Arg	Asp	Ile	Thr	Val	Ser	Glu	Ala	Ala	Ile	His
		210				215						220			
Gly	Lys	Pro	Val	Phe	Ala	Thr	Ser	Pro	Ser	Ala	Arg	Ala	Ser	Glu	Asp
225					230					235					240
Tyr	Phe	Asn	Leu	Thr	Lys	Glu	Leu	Leu	Ile	Leu	Leu	Arg	Asp	Ile	
				245					250					255	

<210>861
 <211>593
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>861
 Arg Ser Phe His Pro Pro Lys Arg Arg Arg His Leu Ser Ile Ser Asp
 1 5 10 15
 Phe Arg Arg Ser Arg Arg Arg Glu Ile Phe Leu His Thr Ser Ala His
 20 25 30
 Leu Leu Ala Gln Ala Val Leu Arg Leu Trp Pro Asp Ala Ile Pro Thr
 35 40 45
 Ile Gly Pro Val Ile Asp His Gly Phe Tyr Tyr Asp Phe Ala Asn Leu
 50 55 60
 Ser Ile Ser Glu Ser Asp Phe Pro Leu Ile Glu Asp Thr Val Lys Gln
 65 70 75 80
 Ile Val Asp Glu Lys Leu Ala Ile Ser Arg Phe Thr Tyr Gly Asp Lys
 85 90 95
 Gln Gln Ala Leu Ala Gln Phe Pro Gln Asn Pro Phe Lys Thr Glu Leu
 100 105 110
 Ile Arg Glu Leu Pro Glu Asn Glu Glu Ile Ser Ala Tyr Ser Gln Gly
 115 120 125
 Glu Phe Phe Asp Leu Cys Arg Gly Pro His Leu Pro Ser Thr Ala His
 130 135 140
 Val Lys Ala Phe Lys Val Leu Arg Thr Ser Ala Ala Tyr Trp Arg Gly
 145 150 155 160
 Asp Pro Ser Arg Glu Ser Leu Val Arg Ile Tyr Gly Thr Ser Phe Pro
 165 170 175
 Thr Ser Lys Glu Leu Arg Ala His Leu Glu Gln Ile Glu Glu Ala Lys
 180 185 190
 Lys Arg Asp His Arg Val Leu Gly Ala Lys Leu Asp Leu Phe Ser Gln
 195 200 205
 Gln Glu Ser Ser Pro Gly Met Pro Phe Phe His Pro Arg Gly Met Ile
 210 215 220
 Val Trp Asp Ala Leu Ile Arg Tyr Trp Lys Gln Leu His Thr Ala Ala
 225 230 235 240
 Gly Tyr Lys Glu Ile Leu Thr Pro Gln Leu Met Asn Arg Gln Leu Trp
 245 250 255
 Glu Val Ser Gly His Trp Asp Asn Tyr Lys Ala Asn Met Tyr Thr Leu
 260 265 270
 Gln Ile Asp Asp Glu Asp Tyr Ala Ile Lys Pro Met Asn Cys Pro Gly
 275 280 285
 Cys Met Leu Tyr Tyr Lys Thr Arg Leu His Ser Tyr Lys Glu Phe Pro
 290 295 300
 Leu Arg Val Ala Glu Val Gly His Val His Arg Gln Glu Ala Ser Gly
 305 310 315 320
 Ala Leu Ser Gly Leu Met Arg Val Arg Ala Phe His Gln Asp Asp Ala
 325 330 335
 His Val Phe Leu Thr Pro Glu Gln Val Glu Glu Glu Thr Leu Asn Ile
 340 345 350
 Leu Gln Leu Val Ser Thr Leu Tyr Gly Thr Phe Gly Leu Glu Tyr His
 355 360 365
 Leu Glu Leu Ser Thr Arg Pro Glu Lys Asp Thr Ile Gly Asp Asp Ser
 370 375 380
 Leu Trp Glu Leu Ala Thr Asp Ala Leu Asn Arg Ala Leu Val Gln Ser
 385 390 395 400
 Gly Thr Pro Phe Ile Val Arg Pro Gly Glu Gly Ala Phe Tyr Gly Pro
 405 410 415
 Lys Ile Asp Ile His Val Lys Asp Ala Ile Gln Arg Thr Trp Gln Cys
 420 425 430
 Gly Thr Ile Gln Leu Asp Met Phe Leu Pro Glu Arg Phe Glu Leu Glu
 435 440 445
 Tyr Thr Thr Ala Gln Gly Thr Lys Ser Val Pro Val Met Leu His Arg
 450 455 460
 Ala Leu Phe Gly Ser Ile Glu Arg Phe Leu Gly Ile Leu Ile Glu Asn

PCT/IB98/01890

Ser Lys Lys Ile Phe Leu Tyr Ile Val Leu Leu Ala Leu Thr Gly Phe
 65 70 75 80
 Tyr Leu Thr Asn Ile Phe Glu Phe Ile Gly Leu Gln Ser Leu Ser Ser
 85 90 95
 Ser Lys Thr Cys Phe Ile Tyr Gly Leu Ser Pro Leu Met Ser Ala Leu
 100 105 110
 Phe Ser Tyr Ile Gln Leu Lys Glu Lys Val Thr Leu Lys Lys Val Leu
 115 120 125
 Gly Leu Ser Leu Gly Leu Val Ser Tyr Ile Cys Tyr Leu Thr Phe Gly
 130 135 140
 Gly Gly Gly Asp Asp Ser Gln Pro Trp Thr Trp Gln Ile Gly Leu Pro
 145 150 155 160
 Glu Leu Leu Ile Leu Gly Ala Ala Ser Leu Ala Ser Phe Gly Trp Thr
 165 170 175
 Leu Leu Arg Gln Ile Glu Lys Gln Ser Thr Leu Ser Val Thr Ala Ile
 180 185 190
 Asn Ala Tyr Ala Met Leu Ile Ala Gly Met Leu Ser Ile Met His Ser
 195 200 205
 Ala Val Val Glu Pro Trp Arg Pro Leu Pro Val Gln Asp Ile Ser Gln
 210 215 220
 Phe Leu Tyr Ala Thr Leu Ala Leu Val Val Ile Ser Asn Leu Ile Cys
 225 230 235 240
 Tyr Asn Leu Tyr Ala Lys Leu Leu Arg Lys Tyr Ser Ser Thr Phe Leu
 245 250 255
 Ser Phe Cys Asn Leu Val Met Pro Leu Tyr Ser Gly Phe Tyr Gly Trp
 260 265 270
 Ile Leu Leu Gly Glu Lys Gly Val Ser Leu Gly Leu Val Leu Ala Val
 275 280 285
 Ala Phe Met Val Ala Gly Cys Arg Leu Ile Tyr His Glu Glu Phe Arg
 290 295 300
 Gln Gly Tyr Ile Val Ser
 305 310

<210>865

<211>118

<212>PRT

<213>Chlamydia pneumoniae

<400>865

Lys Ser Leu Gln Arg Tyr Glu Arg Ser Glu Thr Gln Gly Ala Arg Val
 1 5 10 15
 Ala Ser Phe Ala Gly Asn Ala Leu Ser Ser Ser Met Gln Met Ser Gln
 20 25 30
 Leu Met His Gly Leu Thr Ala Ala Val Glu Gly Leu Ser Ala Gly Gln
 35 40 45
 Thr Gly Ile Glu Val Ala His His Gln Arg Leu Ala Gly Gln Ala Glu
 50 55 60
 Ala Gln Ala Glu Val Leu Lys Gln Met Ser Ser Val Tyr Gly Gln Gln
 65 70 75 80
 Ala Gly Gln Ala Gly Gln Leu Gln Glu Gln Ala Met Gln Ser Phe Asn
 85 90 95
 Thr Ala Leu Gln Thr Leu Gln Asn Ile Ala Asp Ser Gln Thr Gln Thr
 100 105 110
 Thr Ser Ala Ile Phe Asn
 115

<210>866

<211>392

<212>PRT

<213>Chlamydia pneumoniae

<400>866

Leu Lys Lys Leu Pro Ser Trp Ala Leu Lys Ser Leu Lys Arg Met Pro
 1 5 10 15
 Gln Ser Ala Glu Pro Ser Trp Arg Ser Ile Lys Pro Ile Ile Phe Lys
 20 25 30
 Gly Ala Cys Ile Ala Met Thr Ser Gly Val Ser Gly Ser Ser Ser Gln
 35 40 45

Asp Pro Thr Leu Ala Ala Gln Leu Ala Gln Ser Ser Gln Lys Ala Gly
 50 55 60
 Asn Ala Gln-Ser Gly His Asp Thr Lys Asn Val Thr Lys Gln Gly Ala
 65 70 75 80
 Gln Ala Glu Val Ala Ala Gly Gly Phe Glu Asp Leu Ile Gln Asp Ala
 85 90 95
 Ser Ala Gln Ser Thr Gly Lys Lys Glu Ala Thr Ser Ser Thr Thr Lys
 100 105 110
 Ser Ser Lys Gly Glu Lys Ser Glu Lys Ser Gly Lys Ser Lys Ser Ser
 115 120 125
 Thr Ser Val Ala Ser Ala Ser Lys Thr Ala Thr Ala Gln Ala Val Gln
 130 135 140
 Gly Pro Lys Gly Leu Arg Gln Asn Asn Tyr Asp Ser Pro Ser Leu Pro
 145 150 155 160
 Thr Pro Glu Ala Gln Thr Ile Asn Gly Ile Val Leu Lys Lys Gly Met
 165 170 175
 Gly Thr Leu Ala Leu Leu Gly Leu Val Met Thr Leu Met Ala Asn Ala
 180 185 190
 Ala Gly Glu Ser Trp Lys Ala Ser Phe Gln Ser Gln Asn Gln Ala Ile
 195 200 205
 Arg Ser Gln Val Glu Ser Ala Pro Ala Ile Gly Glu Ala Ile Lys Arg
 210 215 220
 Gln Ala Asn His Gln Ala Ser Ala Thr Glu Ala Gln Ala Lys Gln Ser
 225 230 235 240
 Leu Ile Ser Gly Ile Val Asn Ile Val Gly Phe Thr Val Ser Val Gly
 245 250 255
 Ala Gly Ile Phe Ser Ala Ala Lys Gly Ala Thr Ser Ala Leu Lys Ser
 260 265 270
 Ala Ser Phe Ala Lys Glu Thr Gly Ala Ser Ala Ala Gly Gly Ala Ala
 275 280 285
 Ser Lys Ala Leu Thr Ser Ala Ser Ser Ser Val Gln Gln Thr Met Ala
 290 295 300
 Ser Thr Ala Lys Ala Ala Thr Thr Ala Ala Ser Ser Ala Gly Ser Ala
 305 310 315 320
 Ala Thr Lys Ala Ala Ala Asn Leu Thr Asp Asp Met Ala Ala Ala Ala
 325 330 335
 Ser Lys Met Ala Ser Asp Gly Ala Ser Lys Ala Ser Gly Gly Leu Phe
 340 345 350
 Gly Glu Val Leu Asn Lys Pro Asn Trp Ser Glu Lys Val Ser Arg Gly
 355 360 365
 Met Asn Val Val Lys Leu Arg Glu Arg Val Leu His His Leu Gln Glu
 370 375 380
 Met Leu Phe Leu Pro Leu Cys Lys
 385 390

<210>867

<211>496

<212>PRT

<213>Chlamydia pneumoniae

<400>867

Asp Thr Asn Met Ser Ile Ser Ser Ser Ser Gly Pro Asp Asn Gln Lys
 1 5 10 15
 Asn Ile Met Ser Gln Val Leu Thr Ser Thr Pro Gln Gly Val Pro Gln
 20 25 30
 Gln Asp Lys Leu Ser Gly Asn Glu Thr Lys Gln Ile Gln Gln Thr Arg
 35 40 45
 Gln Gly Lys Asn Thr Glu Met Glu Ser Asp Ala Thr Ile Ala Gly Ala
 50 55 60
 Ser Gly Lys Asp Lys Thr Ser Ser Thr Thr Lys Thr Glu Thr Ala Pro
 65 70 75 80
 Gln Gln Gly Val Ala Ala Gly Lys Glu Ser Ser Glu Ser Gln Lys Ala
 85 90 95
 Gly Ala Asp Thr Gly Val Ser Gly Ala Ala Thr Thr Ala Ser Asn
 100 105 110
 Thr Ala Thr Lys Ile Ala Met Gln Thr Ser Ile Glu Glu Ala Ser Lys

Gly	Glu	Ile	Met	Asn	Lys	Lys	Pro	Lys	Lys	Thr	Lys	Lys	Ala	Val	Gln
1		-		5					10					15	
Ser	Lys	Ala	Ala	Pro	Val	Lys	Arg	Val	Pro	Glu	Glu	Ser	Gln	Glu	Ala
			20					25					30		
Ala	Ile	Gln	Gln	Leu	Glu	Leu	Ala	Val	Ser	Asp	Leu	Tyr	Lys	Glu	Leu
		35					40					45			
Pro	Leu	Ala	Gln	Thr	Phe	Ala	Ser	Leu	Thr	Asp	Lys	Asn	Gln	Ile	Asn
	50					55					60				
Ser	Ile	Ile	Ala	Ala	Leu	Ser	Gly	Thr	Leu	Glu	Ser	Leu	His	Leu	Glu
65					70					75				80	
Glu	Leu	Thr	Gln	Gly	Leu	Phe	Pro	Ser	Ala	Gln	Glu	Asp	Ala	Asn	Phe
				85					90					95	

Ala Lys Glu Leu Ser Ser Val Val His Gly Leu Lys Asn Leu Thr Thr
 100 105 110
 Val Val Asn Lys Gln Met Val Lys Gly Ala Glu
 115 120

<210>869

<211>210

<212>PRT

<213>Chlamydia pneumoniae

<400>869

Lys Asn Ala Asn Arg Leu Ala Glu Leu Ala Ala Gln Lys Lys Ala Lys
 1 5 10 15
 Ala Asp Asp Leu Glu Gln Val His Pro Val Pro Thr Glu Glu Ile
 20 25 30
 Lys Lys Ala Leu Gly Asn Ile Phe Glu Gly Leu Ser Asn Gly Leu Asp
 35 40 45
 Leu Gln Gln Ile Leu Gly Leu Ser Asp Tyr Leu Leu Glu Glu Ile Tyr
 50 55 60
 Thr Val Ala Tyr Thr Phe Tyr Ser Gln Gly Lys Tyr Asn Glu Ala Val
 65 70 75 80
 Gly Leu Phe Gln Leu Leu Ala Ala Ala Gln Pro Gln Asn Tyr Lys Tyr
 85 90 95
 Met Leu Gly Leu Ser Ser Cys Tyr His Gln Leu His Leu Tyr Asn Glu
 100 105 110
 Ala Ala Phe Gly Phe Phe Leu Ala Phe Asp Ala Gln Pro Asp Asn Pro
 115 120 125
 Ile Pro Pro Tyr Tyr Ile Ala Asp Ser Leu Leu Lys Leu Gln Gln Pro
 130 135 140
 Glu Glu Ser Asn Asn Phe Leu Asp Val Thr Met Asp Ile Cys Gly Asn
 145 150 155 160
 Asn Pro Glu Phe Lys Ile Leu Lys Glu Arg Cys Gln Ile Met Lys Gln
 165 170 175
 Ser Ile Glu Lys Gln Met Ala Gly Glu Thr Lys Lys Ala Pro Thr Lys
 180 185 190
 Lys Pro Ala Gly Lys Ser Lys Thr Thr Thr Asn Lys Lys Ser Gly Lys
 195 200 205

Lys Arg

210

<210>870

<211>580

<212>PRT

<213>Chlamydia pneumoniae

<400>870

Met Ser Thr Arg Arg Pro Ile Gln Leu Leu Asp Pro Leu Thr Ile Asn
 1 5 10 15
 Gln Ile Ala Ala Gly Glu Val Ile Glu Asn Ser Val Ser Val Val Lys
 20 25 30
 Glu Leu Ile Glu Asn Ser Leu Asp Ala Gly Ala Asp Glu Ile Glu Ile
 35 40 45
 Glu Thr Leu Gly Gly Gly Gln Gly Ala Ile Ile Ile Arg Asp Asn Gly
 50 55 60
 Cys Gly Phe Arg Ala Glu Asp Ile Pro Ile Ala Leu Gln Arg His Ala
 65 70 75 80
 Thr Ser Lys Ile Arg Glu Phe Ser Asp Ile Phe Ser Leu Asn Ser Phe
 85 90 95
 Gly Phe Arg Gly Glu Ala Leu Pro Ser Ile Ala Ser Ile Ser Lys Met
 100 105 110
 Glu Ile Gln Ser Ser Ile Glu Gly Asp Glu Gly Val Arg Thr Val Ile
 115 120 125
 His Gly Gly Asp Ile Val Ser Cys Glu Pro Cys Ala Arg Gln Leu Gly
 130 135 140
 Thr Thr Val Ile Val Asn Ser Leu Phe Tyr Asn Val Pro Val Arg Arg
 145 150 155 160
 Gly Phe Gln Lys Ser Met Gln Ser Asp Arg Leu Gly Ile Arg Lys Leu
 165 170 175

Ile Glu Asn Arg Ile Leu Ser Thr Ala Asn Ile Gly Trp Ser Trp Ile
 180 185 190
 Ser Glu Gly His His Glu Ile Gln Ile Ala Lys Gln Gln Gly Phe Gln
 195 200 205
 Glu Arg Val Ala Tyr Val Met Gly Asp His Phe Met Gln Asp Ala Leu
 210 215 220
 Thr Ile Asp Lys Glu Ala Asn Gly Val Arg Ile Val Gly Val Leu Gly
 225 230 235 240
 Ser Pro Ser Phe His Arg Pro Thr Arg Gln Gly Gln Lys Ile Phe Ile
 245 250 255
 Asn Asp Arg Pro Ile Glu Ser Leu Phe Ile Ser Lys Lys Val Gly Asp
 260 265 270
 Ala Tyr Ala Leu Leu Leu Pro Leu His Arg Tyr Pro Val Phe Val Leu
 275 280 285
 Lys Leu Tyr Leu Pro Ser Ser Trp Cys Asp Phe Asn Val His Pro Gln
 290 295 300
 Lys Ile Glu Ala Arg Ile Leu Lys Glu Glu Leu Val Gly Asp Cys Ile
 305 310 315 320
 Lys Glu Ala Ile Val Glu Thr Leu Ala Cys Pro Pro Gly Ile Leu Cys
 325 330 335
 Arg Thr His Gln Glu Ile Glu Glu Ser Asp Ser Val Pro Leu Pro Met
 340 345 350
 Phe Arg Met Leu Glu Thr Ser Asp Val Gln Glu Glu Ser Val Glu
 355 360 365
 Phe Asp Gln Asn Leu Phe Ala Tyr Ser Ser Glu Asp Val Ser Leu Glu
 370 375 380
 Lys Gln Glu Tyr Thr Ser Arg Gly Pro Lys Ser Gln Met Asp Trp Ile
 385 390 395 400
 Tyr Ser Ser Asp Val Arg Phe Leu Thr Ser Leu Gly Arg Val Val Leu
 405 410 415
 Ala Glu Asp Leu Glu Gly Val His Ile Ile Phe Thr Ala Ala Ala Arg
 420 425 430
 Lys His Leu Phe Phe Leu Ser Leu Met Gln Glu Asn Ser Arg Met Tyr
 435 440 445
 Gln Ser Gln Ala Leu Leu Ile Pro Leu Arg Leu Gln Val Thr Pro Glu
 450 455 460
 Glu Ala Phe Phe Phe Ser His His Gly Arg Thr Leu Cys Asp Leu Gly
 465 470 475 480
 Ile Glu Ile Ser Gln Val Gly Pro Cys Val Phe Ser Ile Glu Ser Thr
 485 490 495
 Pro Thr Val Ile Gly Glu Glu Glu Leu Lys Glu Trp Leu Leu Leu Leu
 500 505 510
 Ala Ala Arg Gly Ser Thr Asp Ile Asn Ser Glu Ala Leu Thr Ala Leu
 515 520 525
 Met Lys Glu Thr Leu Thr Gln Ala Thr Phe Ser Lys His Gln His Val
 530 535 540
 Phe Asp Val Ser Trp Leu Lys Leu Leu Trp Ser Val Gly Lys Pro Glu
 545 550 555 560
 Lys Gly Phe Asp Gly Ala Arg Ile Arg Arg Leu Ile Leu Asp Ser Asp
 565 570 575
 Phe Met Glu Gly
 580

<210>871

<211>355

<212>PRT

<213>Chlamydia pneumoniae

<400>871

Met Ser His Asp Arg Ile Leu Arg Ala Gln Arg Ala Leu Ser Glu His
 1 5 10 15
 Asn Leu Asp Ala Ile Leu Val Glu Lys Ser Glu Asp Leu Ala Tyr Phe
 20 25 30
 Leu His Asp Glu Ala Ile Ala Gly Ile Leu Leu Ile Gly Gln Gln Glu
 35 40 45
 Val Met Phe Phe Val Tyr Arg Met Asp Lys Asp Leu Tyr Ser His Ile

50 55 60
 Gln Arg Val Pro Leu Thr Phe Leu Thr Gln Asp Val Val Ala Asp Leu
 65 70 75 80
 Ser Leu Tyr Val Gln Lys Gln Arg Tyr Gln Lys Ile Gly Phe Asp Ser
 85 90 95
 Ala Ser Thr Val Tyr His Lys Phe Ala Gln Arg Gln Val Leu Pro Cys
 100 105 110
 Leu Trp Glu Pro Leu Glu Cys Phe Thr Glu Lys Ile Arg Ser Ile Lys
 115 120 125
 Ser Glu Glu Glu Ile Arg Arg Met Gln Glu Ala Ala Ala Leu Gly Ser
 130 135 140
 Ala Gly Tyr Asp Tyr Val Leu Thr Leu Leu Arg Glu Gly Ile Thr Glu
 145 150 155 160
 Lys Glu Val Val Arg Gln Leu Arg Ala Phe Trp Ala Glu Ala Gly Ala
 165 170 175
 Glu Gly Pro Ser Phe Pro Pro Ile Ile Ala Phe Gly Glu His Ser Ala
 180 185 190
 Phe Pro His Ser Ile Pro Thr Asp Arg Pro Leu Lys Lys Gly Asp Ile
 195 200 205
 Val Leu Ile Asp Ile Gly Val Leu Leu Asn Gly Tyr Cys Ser Asp Met
 210 215 220
 Thr Arg Met Thr Ala Leu Gly Thr Pro His Pro Lys Leu Leu Glu Ser
 225 230 235 240
 Tyr Pro Val Val Val Glu Ala Gln Lys Arg Ala Met Ala Leu Cys Lys
 245 250 255
 Glu Gly Val Leu Trp Gly Asp Ile Asp Ala Glu Ala Val Arg Val Leu
 260 265 270
 Arg Glu His His Leu Asp Thr Tyr Phe Ile His Gly Ile Gly His Gly
 275 280 285
 Val Gly Arg His Ile His Glu Tyr Pro Cys Ser Pro Arg Gly Ser Gln
 290 295 300
 Val Lys Leu Glu Ser Gly Met Thr Ile Thr Val Glu Pro Gly Val Tyr
 305 310 315 320
 Phe Pro Gly Ile Gly Gly Ile Arg Ile Glu Asp Thr Leu Cys Ile Asp
 325 330 335
 Lys Asn Lys Asn Phe Ser Leu Thr Ala Arg Pro Val Ile Ser Glu Leu
 340 345 350
 Val Cys Leu
 355

<210>872

<211>465

<212>PRT

<213>Chlamydia pneumoniae

<400>872

Phe Phe Leu Phe Phe Lys Leu Ser Tyr Asn Phe Ile Phe Asn Leu Pro
 1 5 10 15
 Leu Thr Met Tyr Gln Leu Leu Ser Ile Gly Tyr Ser Phe Val Ser Phe
 20 25 30
 Ile Ala Leu Leu Trp Met Leu Cys Tyr Ser Pro Asn Tyr Val Thr Asp
 35 40 45
 Leu Tyr Arg Ile Ser Leu Ser Ala Glu Glu Ser Leu Gly Gly Ile Arg
 50 55 60
 Ala Phe Pro Gln Ala Glu Ser Leu Leu Gly Gly Ala Cys Ala Leu Asn
 65 70 75 80
 Phe Pro Asp Leu Glu Glu Arg Leu Pro Asp Leu Arg Lys Glu Leu Leu
 85 90 95
 Phe Leu Gly Ser Asn Asp Arg Pro Asp Ala Cys Gly Gly Lys Phe Ser
 100 105 110
 Leu Gln Leu Ala Ser Ser Lys Glu Cys Tyr Ile Ala Ala Leu Lys Glu
 115 120 125
 Arg Val Tyr Leu Asn Val Thr Asn Ser Ser Arg Gly Pro Val Tyr Ser
 130 135 140
 Phe Ser Pro Lys Gly Val Pro Thr Glu Leu Trp Ile Glu Cys Phe Ser
 145 150 155 160

Val Ser Val Asp Gly Arg Val Glu Val Lys Val Arg Leu Gln Gly Leu
 165 170 175
 His Lys Glu Leu Ile Ser Lys Pro Arg Asp Cys Glu Thr Leu Phe Leu
 180 185 190
 Asn Pro Pro Ala Asn Lys Leu Asp Cys Trp Glu Ile Ala Gly Phe Arg
 195 200 205
 Val Asp Ala Ser Phe Pro Val Lys Gln Lys Ile Arg Arg Ile Gly Val
 210 215 220
 Asp Lys Phe Leu Leu Met His Gly Gly Ala Glu Tyr Ala Asp Lys Ala
 225 230 235 240
 Thr Lys Glu Arg Val Asp Phe Val Ser Ser Asp Glu Glu Asn Tyr Ser
 245 250 255
 Arg Tyr Leu Ala Val Gly Asp Val Leu Leu Trp Asp Gly Asn Cys Trp
 260 265 270
 Gln Thr Cys Gly Glu Phe Gln Gly Ala Ser Ser Arg Ala Pro Leu Phe
 275 280 285
 Glu Val Lys Arg Ile Asp Asp Lys Val Met Ile Ala Asp Leu Trp Asn
 290 295 300
 Val Gly Gly Thr Gln Arg Gln Thr Ile Ser Leu Val Lys Gly Val Pro
 305 310 315 320
 Ser Pro Ile Glu Ile Asn Glu Val Ile Arg Glu Ile Glu Phe Thr Gly
 325 330 335
 Met Arg Ser Trp Ser Lys Pro Ile Val Leu Val Gly Gly Gln Arg Leu
 340 345 350
 Ile Leu Ser Pro Asp Asp Trp Ile Leu Arg Thr Ala Lys Gly Trp Glu
 355 360 365
 Lys Leu Ser Arg Ala Asp Gln Ile Gln Asp Tyr Val Thr Gly Lys Val
 370 375 380
 Thr Gly Pro Leu Leu Val Phe Glu Lys Leu Glu Lys Asp Leu Arg Gly
 385 390 395 400
 Phe Val Leu Arg Gly His Met Phe Asn Ala Gln Arg Thr Leu Val Glu
 405 410 415
 Thr Ile Ser Leu Pro Leu Lys Gln Gly Phe Glu Pro Ala Val Ala Ser
 420 425 430
 Gln Glu Val Ser Ser Asn Thr Arg Ser Ala Gln His Ile Gln Gly Arg
 435 440 445
 Pro Ile Val Gly Asp His Arg Trp Phe Phe Ser Val Ile Leu Tyr Cys
 450 455 460

Ile

465

<210>873

<211>123

<212>PRT

<213>Chlamydia pneumoniae

<400>873

Phe Ser Ser Ser Glu Thr Lys Ser Thr Arg Ser Phe Val Ala Leu
 1 5 10 15
 Ser Ala Tyr Ser Ala Pro Pro Cys Ile Lys Arg Asn Leu Ser Thr Pro
 20 25 30
 Ile Arg Arg Ile Phe Cys Phe Thr Gly Lys Leu Ala Ser Thr Leu Asn
 35 40 45
 Pro Ala Ile Ser Gln Gln Ser Ser Leu Leu Ala Gly Gly Phe Lys Asn
 50 55 60
 Lys Val Ser Gln Ser Arg Gly Phe Glu Ile Asn Ser Leu Cys Lys Pro
 65 70 75 80
 Trp Arg Arg Thr Leu Thr Ser Thr Leu Pro Ser Thr Leu Thr Glu Lys
 85 90 95
 His Ser Ile His Asn Ser Val Gly Thr Pro Leu Gly Leu Asn Glu Tyr
 100 105 110
 Thr Gly Pro Arg Glu Glu Leu Val Thr Phe Lys
 115 120

<210>874

<211>754

<212>PRT

<213>Chlamydia pneumoniae

<400>874

```

Met Val Phe Phe Arg Asn Ser Leu Leu His Leu Val Ala Leu Ser Gly
  1           5           10           15
Met Leu Cys Cys Ser Ser Gly Val Ala Leu Thr Ile Ala Glu Lys Met
          20           25           30
Ala Ser Leu Glu His Ser Gly Arg Gly Ala Asp Asp Tyr Glu Gly Met
          35           40           45
Ala Ser Phe Asn Ala Asn Met Arg Glu Tyr Ser Leu Gln Leu Ser Lys
          50           55           60
Leu Tyr Glu Glu Ala Arg Lys Leu Arg Ala Ser Gly Thr Glu Asp Glu
          65           70           75           80
Ala Leu Trp Lys Asp Leu Ile Arg Arg Ile Gly Glu Val Arg Gly Tyr
          85           90           95
Leu Arg Glu Ile Glu Glu Leu Trp Ala Ala Glu Ile Arg Glu Lys Gly
          100          105          110
Gly Asn Leu Glu Asp Tyr Ala Leu Trp Asn His Pro Glu Thr Thr Ile
          115          120          125
Tyr Asn Leu Val Thr Asp Tyr Gly Thr Glu Asp Ser Ile Tyr Leu Ile
          130          135          140
Pro Gln Glu Ile Gly Ala Ile Lys Ile Ala Thr Leu Ser Lys Phe Val
          145          150          155          160
Val Pro Lys Glu Ser Phe Glu Asp Cys Leu Thr Gln Ile Leu Ser Arg
          165          170          175
Leu Gly Ile Gly Val Arg Gln Val Asn Ser Trp Ile Lys Glu Leu Tyr
          180          185          190
Met Met Arg Lys Glu Gly Cys Ser Val Ala Gly Val Phe Ser Ser Arg
          195          200          205
Lys Asp Leu Glu Ala Leu Pro Glu Thr Ala Tyr Ile Gly Phe Val Leu
          210          215          220
Asn Ser Asn Val Asp Ala His Thr Asn Gln His Val Leu Lys Lys Phe
          225          230          235          240
Ile Asn Pro Glu Thr Thr His Val Asp Val Ile Ala Gly Arg Val Trp
          245          250          255
Ile Phe Gly Ser Ala Gly Glu Val Gly Glu Leu Leu Lys Ile Tyr Asn
          260          265          270
Phe Val Gln Ser Glu Ser Ile Arg Gln Glu Tyr Arg Val Ile Pro Leu
          275          280          285
Thr Lys Ile Asp Pro Gly Glu Met Ile Ser Ile Leu Asn Ala Ala Phe
          290          295          300
Arg Glu Asp Leu Thr Lys Asp Val Ser Glu Glu Ser Leu Gly Leu Arg
          305          310          315          320
Val Val Pro Leu Gln Tyr Gln Gly Arg Ser Leu Phe Leu Ser Gly Thr
          325          330          335
Ala Ala Leu Val Gln Gln Ala Leu Thr Leu Ile Arg Glu Leu Glu Glu
          340          345          350
Gly Ile Glu Asn Pro Thr Asp Lys Thr Val Phe Trp Tyr Asn Val Lys
          355          360          365
His Ser Asp Pro Gln Glu Leu Ala Ala Leu Leu Ser Gln Val His Asp
          370          375          380
Val Phe Ser Gly Glu Asn Lys Ala Ser Val Gly Ala Ala Asp Gly Cys
          385          390          395          400
Gly Ser Gln Leu Asn Ala Ser Ile Gln Ile Asp Thr Thr Val Ser Ser
          405          410          415
Ser Ala Lys Asp Gly Ser Val Lys Tyr Gly Asn Phe Ile Ala Asp Ser
          420          425          430
Lys Thr Gly Thr Leu Ile Met Val Val Glu Lys Glu Val Leu Pro Arg
          435          440          445
Ile Gln Met Leu Leu Lys Lys Leu Asp Val Pro Lys Lys Met Val Arg
          450          455          460
Ile Glu Val Leu Leu Phe Glu Arg Lys Leu Ala His Glu Gln Lys Ser
          465          470          475          480
Gly Leu Asn Leu Leu Arg Leu Gly Glu Glu Val Cys Lys Lys Gly Cys
          485          490          495

```

Ser Pro Ser Val Ser Trp Ala Gly Gly Thr Gly Ile Leu Glu Phe Leu
 500 505 510
 Phe Lys Gly Ser Thr Gly Ser Ser Ile Val Pro Gly Tyr Asp Leu Ala
 515 520 525
 Tyr Gln Phe Leu Met Ala Gln Glu Asp Val Arg Ile Asn Ala Ser Pro
 530 535 540
 Ser Val Val Thr Met Asn Gln Thr Pro Ala Arg Ile Ala Val Val Asp
 545 550 555 560
 Glu Met Ser Ile Ala Val Ser Ser Asp Lys Asp Lys Ala Gln Tyr Asn
 565 570 575
 Arg Ala Gln Tyr Gly Ile Met Ile Lys Met Leu Pro Val Ile Asn Val
 580 585 590
 Gly Glu Glu Asp Gly Lys Ser Tyr Ile Thr Leu Glu Thr Asp Ile Thr
 595 600 605
 Phe Asp Thr Thr Gly Lys Asn His Asp Asp Arg Pro Asp Val Thr Arg
 610 615 620
 Arg Asn Ile Thr Asn Lys Val Arg Ile Ala Asp Gly Glu Thr Val Ile
 625 630 635 640
 Ile Gly Gly Leu Arg Cys Lys Gln Met Ser Asp Ser His Asp Gly Ile
 645 650 655
 Pro Phe Leu Gly Asp Ile Pro Gly Ile Gly Lys Leu Phe Gly Met Ser
 660 665 670
 Ser Thr Ser Asp Ser Leu Thr Glu Met Phe Val Phe Ile Thr Pro Lys
 675 680 685
 Ile Leu Glu Asn Pro Val Glu Gln Gln Glu Arg Lys Glu Glu Ala Leu
 690 695 700
 Leu Ser Ser Arg Pro Gly Glu Arg Glu Glu Tyr Tyr Gln Ala Leu Ala
 705 710 715 720
 Ala Ser Glu Ala Ala Arg Ala Ala His Lys Lys Leu Glu Met Phe
 725 730 735
 Pro Ala Ser Gly Val Ser Leu Ser Gln Val Glu Arg Gln Glu Tyr Asp
 740 745 750
 Gly Cys

<210>875

<211>453

<212>PRT

<213>Chlamydia pneumoniae

<400>875

Arg Gly Lys Asn Thr Met Ala Ala Ser Ile Leu Ser Gln Glu Leu Leu
 1 5 10 15
 Asp Ile Leu Pro Tyr Thr Phe Leu Lys Lys His Cys Leu Leu Pro Ile
 20 25 30
 Glu Glu Ser Ser Glu Ala Ile Thr Ile Ala His Ala Thr Ala Thr Ser
 35 40 45
 Val Ile Ala Gln Asp Glu Val Lys Leu Leu Ile Lys Lys Pro Val Arg
 50 55 60
 Phe Val Leu Lys Glu Glu Ser Glu Ile Leu Gln Arg Leu Gln Gln Leu
 65 70 75 80
 Tyr Ser Asn Arg Glu Gly Asn Val Ser Asp Met Leu Leu Thr Met Lys
 85 90 95
 Glu Glu Asp Gly Thr Thr Ile Ser Glu Glu Glu Asp Leu Leu Glu Thr
 100 105 110
 Thr Asp Thr Ile Pro Val Val Arg Leu Leu Asn Trp Ile Leu Lys Glu
 115 120 125
 Ala Ile Glu Glu Arg Ala Ser Asp Ile His Phe Glu Pro Cys Glu Asp
 130 135 140
 Ser Met Arg Ile Arg Tyr Arg Ile Asp Gly Val Leu His Asp Arg His
 145 150 155 160
 Ser Pro Pro Ser His Leu Arg Ser Ala Leu Thr Thr Arg Leu Lys Val
 165 170 175
 Leu Ala Lys Met Asp Ile Ala Glu His Arg Leu Pro Gln Asp Gly Arg
 180 185 190
 Ile Lys Ile His Ile Gly Gly Gln Glu Val Asp Met Arg Val Ser Thr

195 200 205
 Val Pro Val Ile Tyr Gly Glu Arg Val Val Leu Arg Ile Leu Asp Lys
 210 215 220
 Arg Asn Val Ile Leu Asp Ile Ala Gly Leu His Met Pro Lys Gly Thr
 225 230 235 240
 Glu Ile Leu Phe Lys Asp Thr Ile Thr Ala Pro Glu Gly Ile Leu Leu
 245 250 255
 Val Thr Gly Pro Thr Gly Ser Gly Lys Thr Thr Thr Leu Tyr Ser Val
 260 265 270
 Leu Gln Glu Leu Lys Gly Pro Leu Thr Asn Ile Met Thr Ile Glu Asp
 275 280 285
 Pro Pro Glu Tyr Lys Leu Pro Gly Ile Ala Gln Ile Ala Val Lys Pro
 290 295 300
 Lys Ile Gly Leu Thr Phe Ala Arg Gly Leu Arg His Leu Leu Arg Gln
 305 310 315 320
 Asp Pro Asp Ile Leu Met Val Gly Glu Ile Arg Asp Gln Glu Thr Ala
 325 330 335
 Glu Ile Ala Ile Gln Ala Ala Leu Thr Gly His Leu Val Val Ser Thr
 340 345 350
 Leu His Thr Asn Asp Ala Ile Ser Ala Ile Pro Arg Leu Leu Asp Met
 355 360 365
 Gly Ile Glu Ser Tyr Leu Leu Ser Ala Thr Leu Val Gly Val Val Ala
 370 375 380
 Gln Arg Leu Val Arg Thr Ile Cys Pro Tyr Cys Lys Val Ala Tyr Thr
 385 390 395 400
 Pro Glu Asn Gln Glu Lys Ser Phe Leu Ala Ser Leu Gly Lys Asp Thr
 405 410 415
 Glu Met Pro Leu Tyr Arg Gly Gln Gly Cys Val His Cys Phe Val Pro
 420 425 430
 Asp Ile Lys Glu Asp Arg Glu Phe Thr Asn Phe Tyr Ala Arg Ile His
 435 440 445
 Tyr Phe Val Gln Lys
 450
 <210>876
 <211>394
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>876
 Gly Gly Arg Met Pro Arg Tyr Arg Tyr Thr Tyr Leu Asp Pro Lys Glu
 1 5 10 15
 Arg Arg Lys Arg Gly Tyr Leu Glu Ala Leu His Ile Gln Glu Ala Arg
 20 25 30
 Glu Lys Leu Ala Gln Glu Asn Ile Gln Val Leu Asp Ile Arg Glu Val
 35 40 45
 Ala Leu Arg Arg Met Ser Ile Lys Ser Thr Glu Leu Ile Val Phe Thr
 50 55 60
 Lys Gln Leu Leu Leu Leu Arg Ser Gly Leu Pro Leu Tyr Glu Ser
 65 70 75 80
 Leu Val Ser Leu Arg Asp Gln Tyr His Glu Gln Lys Met Gly Leu Leu
 85 90 95
 Leu Thr Ser Phe Met Glu Thr Leu Arg Ser Gly Gly Ser Leu Ser Gln
 100 105 110
 Ala Met Ala Ala His Pro Asn Ile Phe Asp His Phe Tyr Cys Ser Gly
 115 120 125
 Val Ala Ala Gly Glu Ser Val Gly Asn Leu Glu Gly Cys Leu Gln Asn
 130 135 140
 Ile Ile Val Val Leu Glu Arg Ala Gln Ile Thr Lys Lys Met Val
 145 150 155 160
 Gly Ala Leu Ser Tyr Pro Cys Val Leu Leu Val Phe Ser Phe Ala Val
 165 170 175
 Met Leu Phe Phe Leu Leu Gly Val Ile Pro Ser Leu Lys Glu Thr Phe
 180 185 190
 Glu Asn Met Glu Val Lys Gly Leu Thr Lys Ile Val Phe Gly Val Ser
 195 200 205

Asp Cys Leu Ser Ala Tyr Arg Tyr Leu Phe Leu Gly Phe Ala Ser Ala
 210 215 220
 Leu Ile Thr_Val Gly Ile Leu Met Arg His Arg Ile Pro Trp Lys Lys
 225 230 235 240
 Ile Leu Glu Lys Leu Leu Phe Ala Leu Pro Gly Thr Lys Lys Phe Val
 245 250 255
 Val Lys Val Ala Val Asn Arg Phe Cys Ser Val Ala Ser Ala Ile Leu
 260 265 270
 Lys Gly Gly Gly Thr Leu Ile Glu Gly Leu Asp Leu Gly Cys Asp Ala
 275 280 285
 Ile Pro Tyr Asp Arg Leu Lys Thr Asp Met Arg Asp Ile Val Gln Ala
 290 295 300
 Val Ile Gly Gly Gly Ser Leu Ser Gln Glu Leu Ala Gln Arg Ser Trp
 305 310 315 320
 Val Pro Lys Leu Ala Ile Gly Met Ile Ala Leu Gly Glu Glu Ser Gly
 325 330 335
 Asp Leu Ala Asp Val Leu Gly Tyr Val Ala His Ile Tyr Asn Glu Asp
 340 345 350
 Thr Gln Lys Thr Leu Ala Ser Ile Thr Ser Trp Cys Gln Pro Val Ile
 355 360 365
 Leu Ile Phe Leu Gly Gly Leu Ile Gly Val Ile Met Leu Ala Ile Leu
 370 375 380
 Ile Pro Leu Thr Ser Asn Ile Gln Thr Leu
 385 390

<210>877

<211>175

<212>PRT

<213>Chlamydia pneumoniae

<400>877

Gly Tyr Thr Lys Asn Val Gly Phe Asp Asn Val Val Val Ser Thr Arg
 1 5 10 15
 Asp Ser Asp Phe Ser Trp Trp Pro Asp Arg Cys Asp His Val Gly Asn
 20 25 30
 Ile Asp Pro Thr His Lys Gln Tyr Pro Asn Ile Ile Lys Cys Val Leu
 35 40 45
 Arg Gly Val Gly Met Lys Arg Gln Lys Arg Lys Gln Ser Ile Thr Leu
 50 55 60
 Ile Glu Met Met Val Val Ile Thr Leu Ile Gly Ile Ile Gly Gly Ala
 65 70 75 80
 Leu Ala Phe Asn Met Arg Gly Ser Ile His Lys Gly Lys Val Phe Gln
 85 90 95
 Ser Glu Gln Asn Cys Ala Lys Val Tyr Asp Ile Leu Met Met Glu Tyr
 100 105 110
 Ala Thr Gly Gly Ser Ser Leu Lys Glu Ile Ile Ala His Lys Glu Thr
 115 120 125
 Val Val Glu Glu Ala Ser Trp Cys Lys Glu Gly Arg Lys Leu Leu Lys
 130 135 140
 Asp Ala Trp Gly Glu Asp Leu Ile Val Gln Leu Asn Asp Lys Gly Asp
 145 150 155 160
 Asp Leu Val Ile Phe Ser Lys Arg Val Gln Ser Ser Asn Lys Lys
 165 170 175

<210>878

<211>149

<212>PRT

<213>Chlamydia pneumoniae

<400>878

Leu Leu Ser Asn Ile Met Gly Ser Arg Arg Lys Leu Lys Arg Ser Phe
 1 5 10 15
 Leu Leu Ile Glu Val Leu Met Ala Leu Ser Leu Val Cys Ala Val Leu
 20 25 30
 Leu Pro Cys Ile Arg Phe Tyr Tyr Ala Ile His Arg Ser Phe Glu Glu
 35 40 45
 Asp Ile Phe Asn Leu Gln Leu Pro Ala Leu Ile Asp His Cys Phe Leu
 50 55 60

Ser Val Glu Glu Lys Met Arg Gln Gln Met Ala Glu Gly Thr Val Leu
 65 70 75 80
 Thr Ser Gly Lys Gly Gln Thr Val Ser Leu Ala Tyr Thr Ser Gln Gly
 85 90 95
 Ile Gly Tyr Arg Ile Pro Tyr Gly Tyr Asn Val Asp Ile Arg Gln Glu
 100 105 110
 Val Arg Gly Asp Asn Leu Lys Met Lys Val Cys Leu Ala Asp Val Val
 115 120 125
 Val Glu Leu Phe Pro Asp Gln Lys Gln Ala Val Ser Val Gln Arg Cys
 130 135 140
 Leu Cys Val Thr Leu
 145

<210>879

<211>206

<212>PRT

<213>Chlamydia pneumoniae

<400>879

Asp Glu Ser Leu Pro Cys Arg Cys Cys Cys Gly Thr Phe Pro Arg Ser
 1 5 10 15
 Glu Thr Ser Ser Ile Arg Thr Glu Met Pro Met Cys Asn Ser Ile Ala
 20 25 30
 Met Lys Lys Gln Lys Arg Gly Phe Val Leu Met Glu Leu Leu Met Ser
 35 40 45
 Phe Thr Leu Ile Ala Leu Leu Leu Gly Thr Leu Gly Phe Trp Tyr Arg
 50 55 60
 Lys Ile Tyr Thr Val Gln Lys Gln Lys Glu Arg Ile Tyr Asn Phe Tyr
 65 70 75 80
 Ile Glu Glu Ser Arg Ala Tyr Lys Gln Leu Arg Thr Leu Phe Ser Met
 85 90 95
 Ser Leu Ser Ser Ser Tyr Glu Glu Pro Gly Ser Leu Phe Ser Leu Ile
 100 105 110
 Phe Asp Arg Gly Val Tyr Arg Asp Pro Lys Leu Ala Gly Ala Val Arg
 115 120 125
 Ala Ser Leu His His Asp Thr Lys Asp Gln Arg Leu Glu Leu Arg Ile
 130 135 140
 Cys Asn Ile Lys Asp Gln Ser Tyr Phe Glu Thr Gln Arg Leu Leu Ser
 145 150 155 160
 His Val Thr His Val Val Leu Ser Phe Gln Arg Asn Pro Asp Pro Glu
 165 170 175
 Lys Leu Pro Glu Thr Ile Ala Leu Thr Ile Thr Arg Glu Pro Lys Ala
 180 185 190
 Tyr Pro Pro Arg Thr Leu Thr Tyr Gln Phe Ala Val Gly Lys
 195 200 205

<210>880

<211>344

<212>PRT

<213>Chlamydia pneumoniae

<400>880

His Thr Asn Leu Arg Leu Gly Asn Lys Pro Met Gln Pro Phe Ile Phe
 1 5 10 15
 Thr Leu Leu Cys Leu Thr Ser Leu Val Ser Leu Val Ala Phe Asp Ala
 20 25 30
 Ala Asn Ala Arg Lys Arg Cys Ala Cys Ala Gln Thr Ile Glu Arg Gly
 35 40 45
 Glu Asn Phe Phe Ser Ile Lys Arg Ser Ala Cys Ala Glu Ile Glu Tyr
 50 55 60
 Gln Glu Lys Ser Arg His Ala Ser Ala Ile Glu Arg Ile Ser Lys Asp
 65 70 75 80
 Lys Gly Lys Val Thr Pro Lys Gln Ile Ala Lys Val Ala Thr Lys Lys
 85 90 95
 Lys Gln Arg Tyr Arg Leu Leu Gln Val Pro Phe Ser Arg Pro Pro Asn
 100 105 110
 Asn Ser Arg Tyr Asn Leu Tyr Ala Leu Leu Ser Glu Pro Pro Glu Cys
 115 120 125

Tyr Ser Asp Thr Ala Ser Trp Tyr Ala Ile Phe Ile Arg Leu Leu Arg
 130 135 140
 Arg Ala Tyr Val Asp Thr Gly Asn Val Pro Pro Gly Ser Glu Tyr Ala
 145 150 155 160
 Ile Ala Asn Ala Leu Ile Ser Asn Lys Gln Glu Ile Leu Glu Arg Gly
 165 170 175
 Ala Gln Leu Gly Pro Asp Val Ile Glu Thr Leu Thr Leu Pro Glu Glu
 180 185 190
 Gln Ala Glu Ile Phe Tyr Lys Met Leu Lys Gly Ser Ser Asn Ser Gln
 195 200 205
 Ser Leu Leu Asn Phe Leu His Tyr Glu Glu Lys Ser Leu Gly His Cys
 210 215 220
 Lys Leu Asn Leu Ile Phe Met Asp Pro Leu Leu Leu Glu Ala Val Leu
 225 230 235 240
 Asp His Pro Asp Ala Tyr Arg Glu Thr Ser Leu Leu Arg Asp Gly Ile
 245 250 255
 Trp Glu Ala Val Lys Arg Gln Glu His Ala Ile Gln Glu His Gly Gln
 260 265 270
 Ala Ala Ala Leu Glu Leu Phe Lys Thr Arg Thr Asp Phe Arg Leu Glu
 275 280 285
 Leu Arg Asp Lys Met Gln Leu Leu Ser Arg Tyr Asp Leu Leu Pro
 290 295 300
 Leu Leu Asn Lys Lys Met Phe Asp Tyr Thr Leu Gly Ser Ala Gly Asp
 305 310 315 320
 Tyr Leu Phe Leu Val Asp Pro Asp Thr Lys Ala Ile Ser Arg Cys Arg
 325 330 335
 Cys Pro Ser Lys Ser Ile Lys Leu
 340

<210>881

<211>95

<212>PRT

<213>Chlamydia pneumoniae

<400>881

Phe Phe Leu Ile Ile Val Leu Ile Ser Thr Ile Lys Asn Ile Ser Ile
 1 5 10 15
 Gly Arg Thr Met Ala Asp Glu Thr Pro Lys Glu Asn Ser Ser Lys Glu
 20 25 30
 Ser Ser Ser Gln Phe Asp Ser Leu Lys Arg Lys Val Lys Asp Leu His
 35 40 45
 Ser Asn Pro Lys Val Gly Lys Trp Lys Lys Phe Leu Ser His Arg Ala
 50 55 60
 Cys Glu Xaa Ser Val Val Ala Trp Cys Trp Leu Val Ser Ser Leu Ile
 65 70 75 80
 Leu Phe His Gly Leu Glu Asp Cys Leu Leu Val Val Trp Ser
 85 90 95

<210>882

<211>125

<212>PRT

<213>Chlamydia pneumoniae

<400>882

Ser Arg Glu Met Glu Glu Val Ser Phe Ser Ser Ser Leu Arg Xaa Ile
 1 5 10 15
 Gly Gly Cys Leu Val Leu Val Gly Ile Ile Ala Asp Phe Ile Ser Trp
 20 25 30
 Ala Gly Gly Leu Phe Ile Ala Cys Gly Val Val Leu Gly Phe His Val
 35 40 45
 Glu Ile Arg Lys Met Leu Ser Asn Leu Gln Ser Tyr Ser Ile Ala Asn
 50 55 60
 Gly Pro Ile Lys Asn Ala Ile Leu Cys Gly Leu Ile Leu Phe Phe Val
 65 70 75 80
 Leu Asn Ile Pro Ser Phe Ala Val Ser Phe Ile Val Leu Cys Val Ile
 85 90 95
 Leu Ser Phe Ile Thr Thr Ala Pro Ser Cys Ser Thr Cys Ser Lys Asp
 100 105 110

His Cys Asp Lys His Gln Asp Thr Ser Asn Lys Pro Ser
 115 120 125
 <210>883
 <211>305
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>883
 Leu Gln Val Arg Phe Ser Lys Thr Ser Ile Asn Gly Asn Lys Glu Leu
 1 5 10 15
 Met Gly Ile Ser Leu Pro Glu Leu Phe Ser Asn Leu Gly Ser Ala Tyr
 20 25 30
 Leu Asp Tyr Ile Phe Gln His Pro Ala Tyr Val Trp Ser Val Phe
 35 40 45
 Leu Leu Leu Leu Ala Arg Leu Leu Pro Ile Phe Ala Val Ala Pro Phe
 50 55 60
 Leu Gly Ala Lys Leu Phe Pro Ser Pro Ile Lys Ile Gly Ile Ser Leu
 65 70 75 80
 Ser Trp Leu Ala Ile Ile Phe Pro Lys Val Leu Ala Asp Thr Gln Ile
 85 90 95
 Thr Asn Tyr Met Asp Asn Asn Leu Phe Tyr Val Leu Leu Val Lys Glu
 100 105 110
 Met Ile Ile Gly Ile Val Ile Gly Phe Val Leu Ala Phe Pro Phe Tyr
 115 120 125
 Ala Ala Gln Ser Ala Gly Ser Phe Ile Thr Asn Gln Gln Gly Ile Gln
 130 135 140
 Gly Leu Glu Gly Ala Thr Ser Leu Ile Ser Ile Glu Gln Thr Ser Pro
 145 150 155 160
 His Gly Ile Leu Tyr His Tyr Phe Val Thr Ile Ile Phe Trp Leu Val
 165 170 175
 Gly Gly His Arg Ile Val Ile Ser Leu Leu Leu Gln Thr Leu Glu Val
 180 185 190
 Ile Pro Ile His Ser Phe Phe Pro Ala Glu Met Met Ser Leu Ser Ala
 195 200 205
 Pro Ile Trp Ile Thr Met Ile Lys Met Cys Gln Leu Cys Leu Val Met
 210 215 220
 Thr Ile Gln Leu Ser Ala Pro Ala Ala Leu Ala Met Leu Met Ser Asp
 225 230 235 240
 Leu Phe Leu Gly Ile Ile Asn Arg Met Ala Pro Gln Val Gln Val Ile
 245 250 255
 Tyr Leu Leu Ser Ala Leu Lys Ala Phe Met Gly Leu Leu Phe Leu Thr
 260 265 270
 Leu Ala Trp Trp Phe Ile Ile Lys Gln Ile Asp Tyr Phe Thr Leu Ala
 275 280 285
 Trp Phe Lys Glu Val Pro Ile Met Leu Leu Gly Ser Asn Pro Gln Val
 290 295 300

Leu
 305

<210>884
 <211>95
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>884

Val Leu Ala Phe Phe Ala Thr Ser Phe Lys Ser Val Leu Phe Glu Tyr
 1 5 10 15
 Ser Tyr Gln Ser Leu Leu Leu Ile Leu Ile Val Ser Ala Pro Pro Ile
 20 25 30
 Ile Leu Ala Ser Ile Val Gly Ile Met Val Ala Ile Phe Gln Ala Ala
 35 40 45
 Thr Gln Ile Gln Glu Gln Thr Phe Ala Phe Ala Val Lys Leu Val Val
 50 55 60
 Ile Phe Gly Thr Leu Met Ile Ser Gly Gly Trp Leu Ser Asn Met Ile
 65 70 75 80
 Leu Arg Phe Ala Gly Gln Ile Phe Gln Asn Phe Tyr Lys Trp Lys
 85 90 95

<210>885

<211>117

<212>PRT

<213>Chlamydia pneumoniae

<400>885

Arg Thr Phe Ala Leu Phe Leu Asn Ser Gln His Ser Lys Ser Thr Asn
 1 5 10 15
 Ser Lys Leu Leu Gln Asp Leu Thr Glu Asn Leu Pro Ser Glu Ile Arg
 20 25 30
 Ala His Leu Thr Ala Ser Asp Phe Val Ile Ile Ile Pro Ala Phe Ile
 35 40 45
 Met Gly Gln Ile Lys Asn Ala Phe Glu Ile Gly Val Leu Ile Tyr Leu
 50 55 60
 Pro Phe Phe Val Ile Asp Leu Val Thr Ala Asn Val Leu Val Ala Met
 65 70 75 80
 Gln Met Met Met Leu Ser Pro Leu Ser Ile Ser Leu Pro Leu Lys Leu
 85 90 95
 Leu Leu Ile Val Met Val Asp Gly Trp Thr Leu Leu Leu Gln Gly Leu
 100 105 110
 Met Ile Ser Phe Lys
 115

<210>886

<211>257

<212>PRT

<213>Chlamydia pneumoniae

<400>886

Thr Ser His Leu Arg Leu His His Pro Arg Ile Leu Leu Leu Tyr Leu
 1 5 10 15
 Met Ile Arg Ile Arg Lys Asn Lys Gly Ile His Tyr Tyr Ala Ile His
 20 25 30
 Phe Ser Ile Phe Pro Leu Phe Phe Tyr Ala Glu Arg Leu Met Leu Phe
 35 40 45
 Ser Asp Ala Ser Leu Tyr Glu Asn Ser Cys Pro Ser Arg Cys Gln Pro
 50 55 60
 Thr Pro Pro Pro Ser Asn Ser Asn Pro Leu Asn Val Val Gln Gln Pro
 65 70 75 80
 Val Ala Ala Ser Ser Val Pro Ser Tyr Met Pro Pro Leu Asn Ala Asp
 85 90 95
 Asp Val Leu Pro Arg Asp His Leu Ser Asp Gly Ser Phe Ser Asp Thr
 100 105 110
 Tyr Pro Asp Ile Thr Thr Gln Ala Ile Ile Leu Ile Phe Leu Ala Leu
 115 120 125
 Ser Pro Phe Leu Val Met Leu Leu Thr Ser Tyr Leu Lys Ile Ile Ile
 130 135 140
 Thr Leu Val Leu Leu Arg Asn Ala Leu Gly Val Gln Gln Thr Pro Pro
 145 150 155 160
 Ser Gln Val Leu Asn Gly Ile Ala Leu Ile Leu Ser Ile Tyr Val Met
 165 170 175
 Phe Pro Thr Gly Val Ala Met Tyr Lys Asp Ala Arg Lys Glu Ile Glu
 180 185 190
 Ala Asn Thr Ile Pro Gln Ser Leu Phe Thr Ala Glu Gly Ala Glu Thr
 195 200 205
 Val Phe Val Ala Leu Asn Lys Ser Lys Glu Pro Leu Arg Ser Phe Leu
 210 215 220
 Ile Arg Asn Thr Pro Lys Ala Gln Ile Gln Ser Phe Tyr Lys Ile Ser
 225 230 235 240
 Gln Lys Thr Phe Leu Arg Lys Phe Glu Arg Thr Ser Leu Pro Pro Thr
 245 250 255
 Leu

<210>887

<211>108

<212>PRT

<213>Chlamydia pneumoniae

<400>887

Lys Ser Ser His Lys Ile Asn Ile Ser Leu Leu Ser Val Asn Pro Lys
 1 5 10 15
 Asp Leu Pro Leu Val Glu Lys Ser Arg Pro Glu Leu Lys Asn Ile Val
 20 25 30
 Glu Tyr Ala Asp Ser Leu Ile Leu Thr Ala Lys Pro Asp Val Thr Pro
 35 40 45
 Gly Gly Cys Ile Ile Glu Thr Glu Ala Gly Ile Ile Asn Ala Gln Leu
 50 55 60
 Asp Val Gln Leu Asp Ala Leu Glu Lys Ala Phe Ser Thr Ile Leu Lys
 65 70 75 80
 Ala Lys Asn Pro Val Asp Glu Pro Ser Glu Thr Ser Ser Ser Thr Asp
 85 90 95
 Ser Ser Ser Leu Ser Asn Asp Gln Asp Lys Lys Glu
 100 105

<210>888

<211>140

<212>PRT

<213>Chlamydia pneumoniae

<400>888

Phe Leu Lys Met Met Met Ser Pro Gln Ile Arg Arg Phe Tyr Leu Leu
 1 5 10 15
 Lys Leu Ser Ser Ala Phe Leu Asp Ala Lys Glu Leu Leu Glu Lys Thr
 20 25 30
 Lys Ala Asp Ser Glu Ala Tyr Val Ala Glu Thr Glu Gln Lys Cys Ala
 35 40 45
 Gln Ile Arg Gln Glu Ala Lys Asp Gln Gly Phe Lys Glu Gly Ser Glu
 50 55 60
 Ser Trp Ser Lys Gln Ile Ala Phe Leu Glu Glu Glu Thr Lys Asn Leu
 65 70 75 80
 Arg Ile Arg Val Arg Glu Ala Leu Val Pro Leu Ala Ile Ala Ser Val
 85 90 95
 Arg Lys Ile Ile Gly Lys Glu Leu Glu Leu His Pro Glu Thr Ile Val
 100 105 110
 Ser Ile Ile Ser Gln Ala Leu Lys Glu Leu Thr Gln Asn Lys His Ile
 115 120 125
 Ile Thr Leu Cys Gln Ser Gln Arg Phe Thr Ser Cys
 130 135 140

<210>889

<211>280

<212>PRT

<213>Chlamydia pneumoniae

<400>889

Gly Cys Leu Val Thr Ala Asn Thr Phe Gly Thr Leu Asp Ile Leu Met
 1 5 10 15
 Lys His Ser Lys Glu Asp Asp Leu Ser Arg Phe Leu Pro Lys Asn Leu
 20 25 30
 Leu Val Glu Ser Pro His Pro Glu Glu Ile Pro Leu Lys Ser Leu Ser
 35 40 45
 Phe Thr Met Ser Trp Leu Pro Thr Ile His Pro Ser Trp Ile Thr Ile
 50 55 60
 Ala Met Lys Glu Phe Pro Pro Glu Ile Gln Gly Gln Leu Leu Ala Trp
 65 70 75 80
 Leu Pro Glu Pro Leu Val Gln Glu Ile Leu Pro Leu Leu Pro Gly Ile
 85 90 95
 Ser Ile Ala Pro His Arg Cys Ala Pro Phe Gly Ala Phe Tyr Leu Leu
 100 105 110
 Asp Met Leu Ser Lys Lys Ile Arg Pro Cys Gly Ile Thr Glu Glu Ile
 115 120 125
 Phe Leu Pro Ala Ser Ser Ala Asn Ala Ile Leu Tyr Tyr Thr Gly Pro
 130 135 140
 Val Lys Ile Ala Leu Ile Asn Cys Leu Gly Leu Tyr Ser Ile Ala Lys
 145 150 155 160
 Glu Leu Lys His Ile Leu Asp Lys Val Val Ile Glu Arg Val Lys Asn

165 170 175
 Ala Leu Ser Pro Thr Glu Lys Leu Phe Leu Thr Tyr Cys Gln Ser His
 180 185 190
 Pro Met Lys His Leu Glu Thr Thr Asn Phe Leu Ser Ser Trp Thr Thr
 195 200 205
 Asp Ala Glu Leu Arg Gln Phe Val His Lys Gln Gly Leu Glu Phe Leu
 210 215 220
 Gly Lys Ala Leu Thr Lys Glu Asn Ala Ser Phe Leu Trp Tyr Phe Leu
 225 230 235 240
 Arg Arg Leu Asp Val Gly Arg Ala Tyr Ile Val Glu Gln Thr Leu Lys
 245 250 255
 Thr Trp Tyr Asp His Pro Tyr Val Asp Tyr Phe Lys Ser Arg Leu Glu
 260 265 270
 Gln Cys Met Lys Val Leu Val Lys
 275 280

<210>890

<211>155

<212>PRT

<213>Chlamydia pneumoniae

<400>890

Ala Pro Tyr Cys Lys Cys Cys Ser Arg Thr Cys Ala Arg Glu Arg Leu
 1 5 10 15
 Cys Ser Glu Arg Ser Arg Xaa Tyr Ser Asp Ile Thr Ile Asn Gly Pro
 20 25 30
 Trp Gly Leu Thr Glu Glu Ile Asp Tyr Val Ser Val Trp Gly Ile Ile
 35 40 45
 Leu Ala Lys Ser Ser Leu Thr Lys Phe Arg Leu Ile Phe Tyr Val Leu
 50 55 60
 Ile Leu Ile Leu Phe Val Ile Ser Cys Gly Leu Leu Trp Val Ile Trp
 65 70 75 80
 Lys Thr His Thr Leu Ile Met Thr Met Gly Gly Thr Lys Gly Phe Phe
 85 90 95
 Asn Pro Thr Pro Tyr Thr Lys Asn Ala Leu Glu Ala Lys Lys Ala Glu
 100 105 110
 Gly Ala Ala Asp Lys Glu Lys Lys Glu Asp Ala Asp Ser Gln Gly
 115 120 125
 Glu Ser Lys Asn Ala Glu Thr Ser Asp Lys Asp Ser Ser Asp Lys Asp
 130 135 140
 Ala Pro Glu Gly Ser Asn Glu Ile Glu Gly Ala
 145 150 155

<210>891

<211>214

<212>PRT

<213>Chlamydia pneumoniae

<400>891

Met Val Arg Arg Ser Ile Ser Phe Cys Leu Phe Phe Leu Met Thr Leu
 1 5 10 15
 Leu Cys Cys Thr Ser Cys Asn Ser Arg Ser Leu Ile Val His Gly Leu
 20 25 30
 Pro Gly Arg Glu Ala Asn Glu Ile Val Val Leu Leu Val Ser Lys Gly
 35 40 45
 Val Ala Ala Gln Lys Leu Pro Gln Ala Ala Ala Ala Thr Ala Gly Ala
 50 55 60
 Ala Thr Glu Gln Met Trp Asp Ile Ala Val Pro Ser Ala Gln Ile Thr
 65 70 75 80
 Glu Ala Leu Ala Ile Leu Asn Gln Ala Gly Leu Pro Arg Met Lys Gly
 85 90 95
 Thr Ser Leu Leu Asp Leu Phe Ala Lys Gln Gly Leu Val Pro Ser Glu
 100 105 110
 Leu Gln Glu Lys Ile Arg Tyr Gln Glu Gly Leu Ser Glu Gln Met Ala
 115 120 125
 Ser Thr Ile Arg Lys Met Asp Gly Val Val Asp Ala Ser Val Gln Ile
 130 135 140
 Ser Phe Thr Thr Glu Asn Glu Asp Asn Leu Pro Leu Thr Ala Ser Val

PCT/IB98/01890

949

130	135	140
Glu Leu Pro Gln Ala Thr	Thr Glu Val Leu Ala Ser	Asp Phe Gln Gly
145	150	155
Asn Val Ser Ala Leu His	Thr Leu Leu Asp Ser	Gly Ile Thr Ile Tyr
165	170	175
Asn His Asn Val Glu Thr	Val Ala Arg Leu Ser	Pro Leu Val Arg His
180	185	190
Lys Ala Thr Tyr Ala Arg	Ser Met Phe Met Leu	Glu Gln Ala Ala Asn
195	200	205
Tyr Leu Pro Asp Leu Lys	Ile Lys Ser Gly Ile	Met Val Gly Leu Gly
210	215	220
Glu Met Glu Gly Glu Val	Lys Gln Thr Leu Gln	Asp Leu Ala Ser Ile
225	230	235
Gly Val Arg Ile Val Thr	Ile Gly Gln Tyr Leu	Arg Pro Ser Arg Lys
245	250	255
His Leu Gln Val Lys Ser	Tyr Val Thr Pro	Glu Thr Phe Asp Tyr Tyr
260	265	270
Arg Arg Val Gly Glu Ala	Met Gly Leu Phe Val	Tyr Ala Gly Pro Phe
275	280	285
Val Arg Ser Ser Phe Asn	Ala Asp Met Ile Leu	Ala Ser Val Gln Asp
290	295	300
Lys Ala Ser Val Asn Lys	His Ser Thr Ile His	Leu Ile Glu Ser
305	310	315

<210>894
 <211>397
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>894

Ala Cys Gly Glu Phe Gly	Ile His Val Asp Gly	Tyr Thr Ile Asp Tyr
1	5	10
Pro Ala Met Ala Lys Arg	Lys Asn Thr Val Val	Gln Gly Ile Arg Gln
20	25	30
Gly Leu Glu Gly Leu Ile	Arg Ser Asn Lys Ile	Thr Val Leu Lys Gly
35	40	45
Thr Gly Ser Leu Val Ser	Ser Thr Glu Val Lys	Val Ile Gly Gln Asp
50	55	60
Thr Thr Ile Ile Lys Ala	Asn His Ile Ile Leu	Ala Thr Gly Ser Glu
65	70	75
Pro Arg Pro Phe Pro Gly	Val Pro Phe Ser Ser	Arg Ile Leu Ser Ser
85	90	95
Thr Gly Ile Leu Glu Leu	Glu Val Leu Pro Lys	Lys Leu Ala Ile Ile
100	105	110
Gly Gly Gly Val Ile Gly	Cys Glu Phe Ala Ser	Leu Phe His Thr Leu
115	120	125
Gly Val Glu Ile Thr Val	Ile Glu Ala Leu Asp	His Ile Leu Ala Val
130	135	140
Asn Asn Lys Glu Val Ser	Gln Thr Val Thr Asn	Lys Phe Thr Lys Gln
145	150	155
Gly Ile Arg Ile Leu Thr	Lys Ala Ser Ile Ser	Ala Ile Glu Glu Ser
165	170	175
Gln Asn Gln Val Arg Ile	Thr Val Asn Asp Gln	Val Glu Glu Phe Asp
180	185	190
Tyr Val Leu Val Ala Ile	Gly Arg Gln Phe Asn	Thr Ala Ser Ile Gly
195	200	205
Leu Asp Asn Ala Gly Val	Ile Arg Asp Asp Arg	Gly Val Ile Pro Val
210	215	220
Asp Glu Thr Met Arg Thr	Asn Val Pro Asn Ile	Tyr Ala Ile Gly Asp
225	230	235
Ile Thr Gly Lys Trp Leu	Leu Ala His Val Ala	Ser His Gln Gly Val
245	250	255
Ile Ala Ala Lys Asn Ile	Ser Gly His His Glu	Val Met Asp Tyr Ser
260	265	270
Ala Ile Pro Ser Val Ile	Phe Thr His Pro	Glu Ile Ala Met Val Gly
275	280	285

Leu Ser Leu Gln Glu Ala Glu Gln Gln Asn Leu Pro Ala Lys Leu Thr
 290 295 300
 Lys Phe Pro Phe Lys Ala Ile Gly Lys Ala Val Ala Leu Gly Ala Ser
 305 310 315 320
 Asp Gly Phe Ala Ala Ile Val Ser His Glu Ile Thr Gln Gln Ile Leu
 325 330 335
 Gly Ala Tyr Val Ile Gly Pro His Ala Ser Ser Leu Ile Gly Glu Met
 340 345 350
 Thr Leu Ala Ile Arg Asn Glu Leu Thr Leu Pro Cys Ile Tyr Glu Thr
 355 360 365
 Val His Ala His Pro Thr Leu Ser Glu Val Trp Ala Glu Gly Ala Leu
 370 375 380
 Leu Ala Thr Asn His Pro Leu His Phe Pro Pro Lys Ser
 385 390 395

<210>895

<211>97

<212>PRT

<213>Chlamydia pneumoniae

<400>895

Met Thr Gln Glu Phe Asp Cys Val Val Ile Gly Ala Gly Pro Ser Gly
 1 5 10 15
 Tyr Val Ala Ala Ile Thr Ala Ala Gln Ser Lys Leu Arg Thr Ala Leu
 20 25 30
 Ile Glu Glu Asp Gln Ala Gly Gly Thr Cys Leu Asn Arg Gly Cys Ile
 35 40 45
 Pro Ser Lys Ala Leu Ile Ala Gly Ala Asn Val Val Ser His Ile Lys
 50 55 60
 His Ala Glu Ser Ser Ala Ser Met Leu Met Val Ile Gln Ser Ile Thr
 65 70 75 80
 Leu Arg Trp Gln Lys Glu Lys Ile Gln Ser Ser Arg Gly Ser Val Lys
 85 90 95

Asp

<210>896

<211>157

<212>PRT

<213>Chlamydia pneumoniae

<400>896

Lys Ile Pro Met Pro Phe Ala Lys Glu Thr Glu Met Gln Arg Thr Cys
 1 5 10 15
 Trp Lys Cys Glu Gly Ser Val Ser Met His Val Pro Gln Cys Pro Tyr
 20 25 30
 Cys Ser Ala Phe Leu Gln Asp Pro Pro Val Ala Ser Gly Gly Phe Ser
 35 40 45
 Ser Cys His Ile Ser Phe Pro Glu Gly Ala Ser Lys Glu Glu Ala Glu
 50 55 60
 Asp Leu Phe Ala Val Ser Ser Glu Asp Trp Glu Ala Val Leu Gly Asp
 65 70 75 80
 Gln Asn Pro Thr Gln Glu Thr Asn Lys Gln Val Ile Pro Glu Trp Thr
 85 90 95
 Trp Leu Gln Ser Trp Pro Leu Ala Ala Leu Phe Leu Gly Ile Gly Leu
 100 105 110
 Leu Ala Phe Ala Phe Leu Ile Leu Leu Phe Ser Thr Asp Ser Gly Leu
 115 120 125
 Val Leu Thr Trp Pro Lys Asn Arg Ala Tyr Phe Tyr Gly Ile Ile Gly
 130 135 140
 Ala Ala Val Ala Tyr Arg Gly Tyr Arg Lys Leu Pro Leu
 145 150 155

<210>897

<211>170

<212>PRT

<213>Chlamydia pneumoniae

<400>897

Phe Gly Ser Leu Leu Ser Ile Leu Arg Lys Leu Gly Ser Ser Met Leu

1 5 10 15
 Arg Phe Gln Gly Lys Ser Leu Asn Arg Lys Glu Glu Ile Glu Thr Phe
 20 25 30
 Thr Thr Asp Pro Asn Cys Gln Val Phe Val Gly Ser Leu Leu Ala Ala
 35 40 45
 Gly Thr Gly Ile Asn Leu Thr Ala Gly Asn Val Val Ile Met Tyr Asp
 50 55 60
 Arg Trp Trp Asn Pro Ala Lys Glu Asn Gln Ala Leu Asp Arg Val His
 65 70 75 80
 Arg Ile Gly Gln Lys Asn Thr Val Phe Ile Tyr Lys Leu Ile Thr Glu
 85 90 95
 Asp Thr Leu Glu Glu Arg Ile His Tyr Leu Ile Glu Lys Lys Ile Arg
 100 105 110
 Leu Leu Asp Lys Val Ile Ala Ser Gln Asp Ser Asn Ile Leu His Met
 115 120 125
 Leu Asn Arg Glu Asp Leu Leu Thr Ile Leu Ser Tyr Lys Asp Glu His
 130 135 140
 Gly Thr Ser Asp Ser Glu Glu Ser Pro Val Asp Ala Pro Val Glu Asp
 145 150 155 160
 Asp Thr Gly Val Leu Pro Pro Glu Asp Ser
 165 170

<210>898

<211>301

<212>PRT

<213>Chlamydia pneumoniae

<400>898

Leu Tyr Val Gln Gln Ser Val Leu Pro His Trp Glu His Ile Leu Ser
 1 5 10 15
 Asn His Leu Pro Gly Val Ser Ile Phe Ser Phe His Gly Pro Asn Lys
 20 25 30
 Pro Ser Glu Leu Pro Pro Ala Asp Ile Leu Leu Thr Ser Tyr Gly Thr
 35 40 45
 Leu Arg Gln Asn Tyr Asp Lys Phe Tyr Lys Ile Ala Phe Thr Ile Val
 50 55 60
 Val Phe Asp Glu Ile His Met Ala Lys Asn Lys Ser Ser Gln Ile His
 65 70 75 80
 Lys Ile Leu Cys Arg Ile Asp Ala Gln Met Lys Leu Gly Leu Thr Gly
 85 90 95
 Thr Pro Ile Glu Asn Asn Leu Leu Glu Phe Lys Gly Leu Leu Asp Ile
 100 105 110
 Ile Leu Pro Asn Tyr Leu Pro Ser Asp Ala Leu Phe Lys Lys Leu Phe
 115 120 125
 Thr Lys Arg Cys Ser Ser Glu Glu Leu Glu Glu Ile Ile Pro Ser Gln
 130 135 140
 Asp Leu Leu Leu Lys Leu Thr Arg Pro Phe Ile Leu Arg Arg Thr Lys
 145 150 155 160
 Lys Leu Val Leu Pro Glu Leu Pro Asp Lys Val Glu Ser Ile Ile Ala
 165 170 175
 Cys Ser Leu Ser Pro Asp Gln Glu Lys Leu Tyr Met Ala Thr Leu Gln
 180 185 190
 Arg Glu Lys Ser His Ile Gln Lys Leu Glu Thr Pro Glu Glu Pro Ala
 195 200 205
 Thr Asn Phe Leu His Ile Phe Ala Leu Leu Asn His Leu Lys Gln Ile
 210 215 220
 Cys Asp His Pro Ala Val Phe Phe Lys Asp Pro Asp Gln Tyr Lys Asn
 225 230 235 240
 Tyr Glu Ser Gly Lys Trp Asn Ala Phe Val Lys Leu Leu Lys Glu Ser
 245 250 255
 Leu Asn Ala Gly Tyr Lys Val Val Val Phe Ser Gln Tyr Ile His Met
 260 265 270
 Ile Arg Ile Ile Thr Leu Tyr Leu Glu Glu Ile Gly Ile Lys Tyr Ala
 275 280 285
 Ser Ile Ser Arg Lys Ile Ser Glu Ser Glu Gly Arg Asn
 290 295 300

<210>899

<211>610

<212>PRT

<213>Chlamydia pneumoniae

<400>899

Xaa Pro Leu Ser Ile Ala Leu Leu Lys Lys Phe Phe Phe Leu Asn Glu
 1 5 10 15
 Glu Gly Ala Glu Leu Thr Ile Gly Glu Asn Ser Gln Gly Phe Pro Ser
 20 25 30
 His Phe Ser Leu Gln Trp Gln Gly Leu Val Phe Lys Ala Glu Ile Leu
 35 40 45
 Asp Phe Pro Thr Leu Glu Asp Ile Phe Pro Lys Leu Glu Leu Ala His
 50 55 60
 Thr Ser Leu Glu Asn Val Ser His Asp Ile Ser Ile Thr Asn Val Thr
 65 70 75 80
 Val Cys Ala Glu Glu Ala Lys Val Asn Phe Thr Leu Ser Pro Val Ile
 85 90 95
 His Lys Lys Asp Arg Glu Asn His Pro Lys Thr Arg Ile Gly Ser Val
 100 105 110
 Glu Tyr Val Ala Lys Thr His Glu Met Ile Thr Gly Pro Lys Ala Ile
 115 120 125
 Ala Leu Pro Ile Tyr Ala Ile Pro Leu Leu Ala Asp Lys Phe Lys Asp
 130 135 140
 Gln Leu Leu Ser Leu Leu Cys Tyr Asp Ser Leu Glu Tyr Arg Leu Arg
 145 150 155 160
 Tyr Asp Ile Arg Leu Leu Arg Asp Ala Ser Phe Ser Phe Ser Ala Tyr
 165 170 175
 Leu Val Thr Pro Gly Asp Leu Asp Asn Gly Ser Leu Ile Tyr Pro Asn
 180 185 190
 Tyr Cys Tyr Ser Pro Thr Lys Gly Leu Met Gln Val Val Gly Met Leu
 195 200 205
 Ser Pro Lys Gln Ala Phe Ile Val Lys Ser Glu Gln Val Glu Asp Phe
 210 215 220
 Leu Asn Glu Arg Gly His Leu Ile Gln Glu Pro Gly Phe Gln Thr Phe
 225 230 235 240
 Ile Asn Glu Arg Pro Glu Gly His Leu Thr Tyr Asn Val Thr Glu Gln
 245 250 255
 Gly Val Leu Leu Phe His Tyr Asp Val Gly Asp Pro Ser Ser Thr Glu
 260 265 270
 Ile Arg Phe Gly Thr Trp Thr Tyr Tyr Thr Asn Gln Gly Phe Phe Leu
 275 280 285
 Glu Lys Lys Asn Asp Leu Pro Ile Gln Asp Gly Leu Ile Val Glu Pro
 290 295 300
 Gln Asp Ile Pro Ala Phe Ile Val Lys Asn Asp Ala Ala Leu Arg Arg
 305 310 315 320
 Leu Pro Asn Phe Phe Ser Ser Pro Pro Asn Leu Lys Asp Leu Leu Ile
 325 330 335
 Glu Val His Arg Gln Ser Arg Gly Lys Gly Leu Asp Leu Lys Pro Ile
 340 345 350
 Leu Val Gly Leu Gly Glu Ser Arg Cys Trp Leu Phe Gly Val Phe Leu
 355 360 365
 Tyr Arg Glu Asp Ile Gly Phe Ser Leu Ile Pro Thr Pro Leu Gln Gly
 370 375 380
 Leu Cys Phe Leu Pro Arg Val Ile Pro Pro Glu Asn Val Pro Gln Phe
 385 390 395 400
 Leu Thr Gln Tyr Ala Gln His Glu Arg Ile Leu Phe Pro Asn Pro Gln
 405 410 415
 Thr Arg Pro Pro Glu Ser Tyr Glu Leu Val Ile Gln Ser Ile His Arg
 420 425 430
 Pro His Pro Ala Ser Pro Leu His Leu Gln Leu Glu Leu Lys Thr Asn
 435 440 445
 Leu Gly Ser Val Pro Ile Gly Ile Ala Leu Gln Gly Leu Lys Ser Lys
 450 455 460
 His Thr Phe Leu Phe Thr Gln Ala Gly Phe Leu Asp Leu Lys Gln Asn

465 470 475 480
 Leu Phe Gln Phe Leu Lys Gln Phe Leu Ser Thr Gln Lys Cys Val Ile
 485 490 495
 Ala Glu Asn Thr Val Ile Ala Asn Ile Thr Asp Val Phe Lys Leu Asp
 500 505 510
 Ala Leu Ala Pro Leu Ser Val Thr Asp Asp Thr Ile Ala Asn Pro Glu
 515 520 525
 Asp Leu Gln Phe Phe Ser Gln Leu Lys Ala Ala Cys Leu Pro Pro Ile
 530 535 540
 Pro Gln Asn Leu Phe Ser Ser Asp His Gln Leu Arg Pro Tyr Gln Asn
 545 550 555 560
 Ser Gly Leu Leu Trp Met Trp Phe Leu Tyr Asn His Arg Leu Ser Gly
 565 570 575
 Leu Leu Cys Asp Glu Met Gly Leu Gly Lys Thr His Gln Ala Thr Ala
 580 585 590
 Leu Thr Arg Tyr Cys Ile Ser Val Phe Thr Ala Leu Ser Ala Pro Glu
 595 600 605
 Ile Pro
 610
 <210>900
 <211>181
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>900
 His Asn Ile Met Val Leu Glu Ala Leu Ala Ile Phe Arg Gln Asp Ala
 1 5 10 15
 Met Gln His Leu Leu Lys His Arg Lys Glu Ile Val Val Asp Phe Cys
 20 25 30
 Glu Asp Ser Tyr Thr Ile Arg Ile Pro Asp Glu Glu Ala Pro Glu Gly
 35 40 45
 Tyr Trp Leu Ser Thr Leu Lys Leu Gln Asp Ile Asp Arg Leu Thr Phe
 50 55 60
 Ala Ser Cys Ser Cys Pro Asp Gly Glu Cys Cys Leu His Leu Met Thr
 65 70 75 80
 Ala Tyr Phe Ala Val Tyr Asp Ala Leu Gly Leu His Pro Leu His Asp
 85 90 95
 Lys Phe Arg His Ser Phe Trp Tyr Ala Val Phe Ser His Phe Phe Leu
 100 105 110
 Asp Ser Ile Pro Leu Gln Ala Gln Gly Glu Met Val Tyr Thr Leu Glu
 115 120 125
 Ser Pro His Ile Thr Leu Thr Ile Glu Cys Leu Ser Glu Glu Val Phe
 130 135 140
 Gln Asp Trp Leu Arg Thr Ile His Ala Ser Glu Glu Pro Thr Val Phe
 145 150 155 160
 Thr Asn Lys Thr Phe Leu Xaa Ser Ala Leu Tyr Arg Thr Ala Lys Lys
 165 170 175
 Ile Leu Phe Leu Lys
 180
 <210>901
 <211>412
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>901
 Met Lys Lys Asn Ala Ser His Lys Thr Asn Asp Lys Lys Ser Leu Ser
 1 5 10 15
 Ile Trp Ser Ile Gly Gly Ser Ile Phe Ala Met Phe Phe Gly Ala Gly
 20 25 30
 Asn Ile Val Phe Pro Leu Ala Leu Gly Tyr His Tyr Asn Ala His Pro
 35 40 45
 Trp Ser Ala Tyr Phe Gly Met Met Leu Thr Ala Val Cys Val Pro Leu
 50 55 60
 Leu Gly Leu Val Ser Met Leu Phe Tyr Ser Gly Asp Tyr Gln Lys Phe
 65 70 75 80
 Phe Phe Ser Ile Gly Arg Ile Pro Gly Met Ile Phe Ile Thr Ala Ile

85					90					95					
Ile	Leu	Leu	Ile	Gly	Pro	Phe	Gly	Gly	Ile	Pro	Arg	Ala	Ile	Ala	Val
			100					105					110		
Ser	His	Ala	Thr	Leu	Ile	Ser	Leu	Ser	Glu	His	Lys	Ser	Ala	Phe	Ile
		115					120					125			
Pro	Ser	Leu	Pro	Ile	Phe	Ser	Ala	Ile	Cys	Cys	Val	Leu	Ile	Tyr	Ile
		130				135					140				
Phe	Ser	Cys	Lys	Leu	Ser	Arg	Leu	Ile	Gln	Trp	Leu	Gly	Ser	Val	Phe
145				150					155					160	
Phe	Pro	Ile	Met	Leu	Val	Thr	Leu	Leu	Trp	Val	Ile	Ile	Arg	Ser	Phe
			165						170					175	
Met	Ile	Pro	Thr	His	Pro	Met	Val	Gln	Glu	Phe	Ile	Pro	Asn	Ala	Arg
		180						185				190			
Gln	Ala	Trp	Leu	Ala	Gly	Phe	Ile	Glu	Gly	Phe	Asn	Thr	Met	Asp	Leu
		195					200					205			
Leu	Ala	Ala	Phe	Phe	Phe	Cys	Ser	Ile	Val	Leu	Ile	Ser	Leu	Arg	Gln
		210				215					220				
Leu	Val	Ala	Glu	Glu	Lys	His	Pro	Thr	Glu	Glu	Ile	Pro	Leu	Ser	
225				230					235					240	
Phe	Gln	Gly	Ile	Ser	Lys	Lys	Asn	Lys	Arg	Ser	Leu	Ala	Leu	Gly	Phe
			245						250					255	
Phe	Leu	Ala	Ala	Ile	Leu	Leu	Gly	Met	Thr	Tyr	Leu	Gly	Phe	Val	Leu
		260					265					270			
Ser	Ala	Ala	Arg	His	Ala	Gly	Leu	Leu	Val	Asn	Val	Ser	Lys	Gly	His
		275					280					285			
Ile	Leu	Gly	Arg	Ile	Ser	Ala	Ile	Ala	Leu	Gly	Pro	Asn	Ser	Ile	Leu
	290					295					300				
Ala	Gly	Val	Ser	Val	Phe	Ile	Ala	Cys	Leu	Thr	Thr	Glu	Ile	Ala	Leu
305				310					315					320	
Val	Gly	Ile	Val	Ala	Asp	Phe	Leu	Ala	Arg	Val	Val	Ser	Phe	Lys	Lys
			325						330					335	
Leu	Asn	Tyr	Ala	Ser	Ala	Val	Ile	Cys	Thr	Leu	Ile	Pro	Thr	Tyr	Leu
		340					345					350			
Ile	Ser	Ile	Leu	Asn	Phe	Glu	Thr	Ile	Ser	His	Leu	Leu	Leu	Pro	Leu
	355					360					365				
Leu	Gln	Leu	Ser	Tyr	Pro	Ala	Leu	Ile	Val	Leu	Ala	Cys	Gly	Asn	Ile
	370					375					380				
Ala	Tyr	Lys	Leu	Trp	Asn	Phe	Arg	Tyr	Ser	Pro	Val	Leu	Phe	Tyr	Leu
385				390					395					400	
Thr	Leu	Ser	Leu	Thr	Ile	Val	Leu	Lys	Leu	Val	Asn				
			405				410								

<210>902

<211>211

<212>PRT

<213>Chlamydia pneumoniae

<400>902

Leu	Thr	Met	Lys	Gln	Phe	Ile	Leu	Arg	Thr	Leu	Asn	Ala	Leu	Phe	Pro
1				5					10					15	
Asn	Pro	Lys	Pro	Ser	Leu	Glu	Gly	Trp	Ser	Ser	Pro	Phe	Gln	Leu	Leu
			20					25					30		
Ile	Ala	Ile	Leu	Leu	Ser	Gly	Asn	Ser	Thr	Asp	Lys	Ala	Val	Asn	Ser
		35					40					45			
Val	Thr	Pro	Gln	Leu	Phe	Ala	Lys	Ala	Pro	Asp	Ala	Gln	Ser	Ile	Leu
	50					55				60					
Asp	Leu	Pro	Pro	Gly	Lys	Leu	Tyr	Gln	Leu	Ile	Ala	Pro	Cys	Gly	Leu
	65				70				75					80	
Gly	Glu	Arg	Lys	Ser	Ala	Tyr	Ile	Tyr	Gln	Leu	Ser	Gln	Ile	Leu	Val
			85					90						95	
Arg	Asp	Phe	His	Gly	Glu	Pro	Pro	Asn	Asp	Met	Ala	Leu	Leu	Thr	Gln
		100						105						110	
Leu	Pro	Gly	Val	Gly	Arg	Lys	Thr	Ala	Ser	Val	Phe	Leu	Gly	Ile	Ala
		115					120						125		
Tyr	Gly	Lys	Pro	Thr	Phe	Pro	Val	Asp	Thr	His	Ile	Leu	Arg	Leu	Ala
	130						135							140	

Gln Arg Trp Lys Ile Ser Glu Lys Lys Ser Pro Ser Ala Ala Glu Lys
 145 150 155 160
 Asp Leu Ala Arg Phe Phe Gly His Glu Asn Thr Pro Lys Leu His Leu
 165 170 175
 Gln Leu Ile Tyr Tyr Ala Arg Gln Tyr Cys Pro Ala Leu His His Lys
 180 185 190
 Ile Asp Asn Cys Pro Ile Cys Ser Tyr Leu Ala Lys Glu Ala Asn Ser
 195 200 205
 Thr Arg Thr
 210
 <210>903
 <211>442
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>903
 Met Leu Lys His Asp Thr Ile Ala Ala Ile Ala Thr Pro Pro Gly Glu
 1 5 10 15
 Gly Ser Ile Ala Val Val Arg Leu Ser Gly Pro Gln Ala Ile Val Ile
 20 25 30
 Ala Asp Arg Ile Phe Ser Gly Ser Val Ala Ser Phe Ala Ser His Thr
 35 40 45
 Ile His Leu Gly Gln Val Ile Phe Glu Glu Thr Leu Ile Asp Gln Ala
 50 55 60
 Leu Leu Leu Leu Met Arg Ser Pro Arg Ser Phe Thr Gly Glu Asp Val
 65 70 75 80
 Val Glu Phe Gln Cys His Gly Gly Phe Phe Ala Cys Ser Gln Ile Leu
 85 90 95
 Asp Ala Leu Ile Ala Leu Gly Ala Arg Pro Ala Leu Pro Gly Glu Phe
 100 105 110
 Ser Gln Arg Ala Phe Leu Asn Gly Lys Ile Asp Leu Val Gln Ala Glu
 115 120 125
 Ala Ile Gln Asn Leu Ile Val Ala Glu Asn Ile Asp Ala Phe Arg Ile
 130 135 140
 Ala Gln Thr His Phe Gln Gly Asn Phe Ser Lys Lys Ile Gln Glu Ile
 145 150 155 160
 His Thr Leu Ile Ile Glu Ala Leu Ala Phe Leu Glu Val Leu Ala Asp
 165 170 175
 Phe Pro Glu Glu Glu Gln Pro Asp Leu Leu Val Pro Gln Glu Lys Ile
 180 185 190
 Gln Asn Ala Leu His Ile Val Glu Asp Phe Ile Ser Ser Phe Asp Glu
 195 200 205
 Gly Gln Arg Leu Ala Gln Gly Thr Ser Leu Ile Leu Ala Gly Lys Pro
 210 215 220
 Asn Val Gly Lys Ser Ser Leu Leu Asn Ala Leu Leu Gln Lys Asn Arg
 225 230 235 240
 Ala Ile Val Thr His Ile Pro Gly Thr Thr Arg Asp Ile Leu Glu Glu
 245 250 255
 Gln Trp Leu Leu Gln Gly Lys Arg Ile Arg Leu Leu Asp Thr Ala Gly
 260 265 270
 Gln Arg Thr Thr Asp Asn Asp Ile Glu Lys Glu Gly Ile Glu Arg Ala
 275 280 285
 Leu Ser Ala Met Glu Glu Ala Asp Gly Ile Leu Trp Val Ile Asp Ala
 290 295 300
 Thr Gln Pro-Leu Glu Asp Leu Pro Lys Ile Leu Phe Thr Lys Pro Ser
 305 310 315 320
 Phe Leu Leu Trp Asn Lys Ala Asp Leu Thr Pro Pro Phe Leu Asp
 325 330 335
 Thr Ser Leu Pro Gln Phe Ala Ile Ser Ala Lys Thr Gly Glu Gly Leu
 340 345 350
 Thr Gln Val Lys Gln Ala Leu Ile Gln Trp Met Gln Lys Gln Glu Ala
 355 360 365
 Gly Lys Thr Ser Lys Val Phe Leu Val Ser Ser Arg His His Met Ile
 370 375 380
 Leu Gln Glu Val Ala Arg Cys Leu Lys Glu Ala Gln Lys Asn Leu Tyr

WO 99/27105

PCT/IB98/01890

385 390 395 400
 Leu Gln Pro Pro Glu Ile Ile Ala Leu Glu Leu Arg Glu Ala Leu His
 Ser Ile Gly Met Leu Ser Gly Lys Glu Val Thr Glu Ser Ile Leu Gly
 Glu Ile Phe Ser Lys Phe Cys Ile Gly Lys

<210>904

<211>303

<212>PRT

<213>Chlamydia pneumoniae

<400>904

Gly Leu Val Gln Lys Pro Gln Tyr Ile Asp Arg Ile Thr Lys Lys Lys
 Val Ile Glu Pro Ile Phe Tyr Glu Lys Thr Met Leu Phe Leu Tyr Asn
 Ser Lys Leu Gly Lys Lys Leu Ser Val Phe Leu Ser Thr His Pro Ile
 Phe Ser Arg Ile Tyr Gly Trp Leu Gln Arg Cys Ser Trp Thr Arg Arg
 Gln Ile Arg Pro Phe Met Asn Arg Tyr Lys Ile Ser Glu Lys Glu Leu
 Thr Lys Pro Val Ala Asp Phe Thr Ser Phe Asn Asp Phe Phe Thr Arg
 Lys Leu Lys Pro Glu Ala Arg Pro Ile Val Gly Gly Lys Glu Val Phe
 Ile Thr Pro Val Asp Gly Arg Tyr Leu Val Tyr Pro Asn Val Ser Glu
 Phe Asp Lys Phe Ile Val Lys Ser Lys Ala Phe Ser Leu Pro Lys Leu
 Leu Gly Asp His Glu Leu Thr Lys Leu Tyr Ala His Gly Ser Ile Val
 Phe Ala Arg Leu Ala Pro Phe Asp Tyr His Arg Phe His Phe Pro Cys
 Asp Cys Leu Pro Gln Lys Thr Arg Cys Val Asn Gly Ala Leu Phe Ser
 Val His Pro Leu Ala Val Lys Asp Asn Phe Ile Leu Phe Cys Glu Asn
 Lys Arg Thr Val Thr Val Leu Glu Thr Glu Gln Phe Gly Asn Val Leu
 Tyr Leu Glu Val Gly Ala Met Asn Val Gly Ser Ile Val Gln Thr Phe
 Ser Pro Asn Gln Thr Tyr Ala Lys Gly Asp Glu Lys Gly Phe Phe Ala
 Phe Gly Gly Ser Thr Val Ile Leu Leu Phe Leu Pro Asn Ala Ile Arg
 Phe Asp Asn Asp Leu Leu Lys Asn Ser Arg Met Gly Phe Glu Thr Arg
 Cys Leu Met Gly Gln Ser Leu Gly Arg Ser Gln Arg Glu Glu Ile

<210>905

<211>468

<212>PRT

<213>Chlamydia pneumoniae

<400>905

Ile Ser Glu Arg Arg Asn Leu Lys Thr Leu Lys Thr Phe Phe Gly Ile
 Ala Lys Arg Asp Lys Ser Gln Lys Trp Arg Ile Met Trp Leu Val Ile
 Leu Trp Ala Leu Ala Ala Ser Leu Ala Ile Ala Leu Val Ala Lys Gly
 Tyr Tyr Arg Phe Val Tyr Phe Arg Arg Tyr Ala Val Gln Val Ile Arg
 Glu Val Arg Leu Ser Met Glu Leu Lys Glu Trp Ala Leu Ala Glu Gln

65 70 75 80
 Gln Leu Leu Pro Ile Leu Lys Lys Arg Ser Tyr Arg Arg Gln Cys Leu
 85 90 95
 Phe Glu Tyr Met Arg Ile Leu Arg Lys Met Gln Arg Phe Glu Glu Ser
 100 105 110
 Glu Lys Leu Leu Ala Glu Ala Lys Lys Leu Gly Leu Arg Gly Pro Tyr
 115 120 125
 Phe Phe Leu Glu Ile Ala Tyr Lys Ala Tyr Arg Phe Gly Ala Phe Lys
 130 135 140
 Glu Cys Ala Gln Ala Phe Ala Ser Val Pro Gln Asp Leu Phe Glu Glu
 145 150 155 160
 Glu Asp Ala Ala Lys Tyr Ala Ser Ala Leu Val Arg Leu Gly Asp Leu
 165 170 175
 Asp Ala Ala Cys Ser Leu Ile Glu Pro Trp Ile Ser Pro Leu Ser His
 180 185 190
 Gln Glu Thr Phe Val Thr Met Gly His Ile Tyr Phe Thr Ser Lys Arg
 195 200 205
 Tyr Lys Asp Ala Ile Asp Phe Tyr Asn Arg Ala Asn Ala Leu Gly Val
 210 215 220
 Cys Pro Val Glu Val Thr Tyr Asn Leu Ala Gln Ala Tyr Arg Ile Thr
 225 230 235 240
 Ser Ser Tyr Ala Lys Ala Gly Lys Leu Phe Arg Lys Leu Leu Ser Asn
 245 250 255
 Pro Val Tyr Lys Glu Glu Ala Leu Phe Asn Ile Gly Leu Cys Glu Gln
 260 265 270
 Lys Leu Gly Arg Pro Gly Lys Ala Leu Leu Ile Tyr Gln Ser Ser Asp
 275 280 285
 Leu Trp Ser Arg Gly Asp Ala Leu Leu Met Lys Tyr Ala Ala Met Ala
 290 295 300
 Ala Met Asp Gln Arg Asp Tyr Val Leu Ala Glu Pro Cys Trp Glu Leu
 305 310 315 320
 Ala Leu Arg Cys Ser Thr Phe Ala Lys Asp Tyr Lys Cys Gly Leu Gly
 325 330 335
 Tyr Gly Phe Ser Leu Cys Arg Leu Arg Lys Tyr Gly Asp Ala Glu Arg
 340 345 350
 Val Tyr Cys Asn Leu Ile Gln Asn Phe Pro Glu Cys Leu Thr Ala Cys
 355 360 365
 Lys Ala Leu Ala Trp Leu Cys Gly Val Gly Tyr Ala Thr Leu Leu Gly
 370 375 380
 Ser Glu Glu Gly Leu Met Tyr Ala Lys Lys Ala Val Glu Leu Asp His
 385 390 395 400
 Ser Cys Glu Thr Leu Glu Leu Leu Ser Ala Cys Glu Ala Arg Cys Gly
 405 410 415
 Asn Phe Asp Ala Ala Tyr Glu Ile Gln Ser Phe Leu Ser Ser Arg Asp
 420 425 430
 Thr Ser Leu Gln Glu Lys Gln Arg Arg Ser Gln Ile Leu Arg Ile Leu
 435 440 445
 Arg Lys Lys Leu Pro Leu Asn Asp His His Ile Val Glu Val Asp Ala
 450 455 460
 Leu Leu Ala Ala
 465
 <210>906
 <211>970
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>906
 Met Leu Gly Phe Leu Lys Arg Phe Phe Gly Ser Ser Gln Glu Arg Ile
 1 5 10 15
 Leu Lys Lys Phe Gln Lys Leu Val Asp Lys Val Asn Ile Tyr Asp Glu
 20 25 30
 Met Leu Thr Pro Leu Ser Asp Asp Glu Leu Arg Asn Lys Thr Ala Glu
 35 40 45
 Leu Lys Gln Arg Tyr Gln Asn Gly Glu Ser Leu Asp Ser Met Leu Pro
 50 55 60

Glu Ala Tyr Gly Val Val Lys Asn Val Cys Arg Arg Leu Ala Gly Thr
 65 70 75 80
 Pro Val Glu Val Ser Gly Tyr His Gln Arg Trp Asp Met Val Pro Tyr
 85 90 95
 Asp Val Gln Ile Leu Gly Ala Ile Ala Met His Lys Gly Phe Ile Thr
 100 105 110
 Glu Met Gln Thr Gly Glu Gly Lys Thr Leu Thr Ala Val Met Pro Leu
 115 120 125
 Tyr Leu Asn Ala Leu Thr Gly Lys Pro Val His Leu Val Thr Val Asn
 130 135 140
 Asp Tyr Leu Ala Gln Arg Asp Cys Glu Trp Val Gly Ser Val Leu Arg
 145 150 155 160
 Trp Leu Gly Leu Thr Thr Gly Val Leu Val Ser Gly Thr Leu Leu Glu
 165 170 175
 Lys Arg Lys Lys Ile Tyr Gln Cys Asp Val Val Tyr Gly Thr Ala Ser
 180 185 190
 Glu Phe Gly Phe Asp Tyr Leu Arg Asp Asn Ser Ile Ala Thr Arg Leu
 195 200 205
 Glu Glu Gln Val Gly Arg Gly Tyr Tyr Phe Ala Ile Ile Asp Glu Val
 210 215 220
 Asp Ser Ile Leu Ile Asp Glu Ala Arg Thr Pro Leu Ile Ile Ser Gly
 225 230 235 240
 Pro Gly Glu Lys His Asn Pro Val Tyr Phe Glu Leu Lys Glu Lys Val
 245 250 255
 Ala Ser Leu Val Tyr Leu Gln Lys Glu Leu Cys Ser Arg Ile Ala Leu
 260 265 270
 Glu Ala Arg Arg Gly Leu Asp Ser Phe Leu Asp Val Asp Ile Leu Pro
 275 280 285
 Lys Asp Lys Lys Val Leu Glu Gly Ile Ser Glu Phe Cys Arg Ser Leu
 290 295 300
 Trp Leu Val Ser Lys Gly Met Pro Leu Asn Arg Val Leu Arg Arg Val
 305 310 315 320
 Arg Glu His Pro Asp Leu Arg Ala Met Ile Asp Lys Trp Asp Val Tyr
 325 330 335
 Tyr His Ala Glu Gln Asn Lys Glu Glu Ser Leu Glu Arg Leu Ser Glu
 340 345 350
 Leu Tyr Ile Ile Val Asp Glu His Asn Asn Asp Phe Glu Leu Thr Asp
 355 360 365
 Lys Gly Met Gln Gln Trp Val Glu Tyr Ala Gly Gly Ser Thr Glu Glu
 370 375 380
 Phe Val Met Met Asp Met Gly His Glu Tyr Ala Leu Ile Glu Asn Asp
 385 390 395 400
 Glu Thr Leu Ser Pro Ala Asp Lys Ile Asn Lys Lys Ile Ala Ile Ser
 405 410 415
 Glu Glu Asp Thr Leu Arg Lys Ala Arg Ala His Gly Leu Arg Gln Leu
 420 425 430
 Leu Arg Ala Gln Leu Leu Met Glu Arg Asp Val Asp Tyr Ile Val Arg
 435 440 445
 Asp Asp Gln Ile Val Ile Ile Asp Glu His Thr Gly Arg Pro Gln Pro
 450 455 460
 Gly Arg Arg Phe Ser Glu Gly Leu His Gln Ala Ile Glu Ala Lys Glu
 465 470 475 480
 His Val Thr Ile Arg Lys Glu Ser Gln Thr Leu Ala Thr Val Thr Leu
 485 490 495
 Gln Asn Phe Phe Arg Leu Tyr Glu Lys Leu Ala Gly Met Thr Gly Thr
 500 505 510
 Ala Ile Thr Glu Ser Arg Glu Phe Lys Glu Ile Tyr Asn Leu Tyr Val
 515 520 525
 Leu Gln Val Pro Thr Phe Lys Pro Cys Leu Arg Ile Asp His Asn Asp
 530 535 540
 Glu Phe Tyr Met Thr Glu Arg Glu Lys Tyr His Ala Ile Val Asn Glu
 545 550 555 560
 Ile Ala Thr Ile His Gly Lys Gly Asn Pro Ile Leu Val Gly Thr Glu
 565 570 575

Ser Val Glu Val Ser Glu Lys Leu Ser Arg Ile Leu Arg Gln Asn Arg
 580 585 590
 Ile Glu His Thr Val Leu Asn Ala Lys Asn His Ala Gln Glu Ala Glu
 595 600 605
 Ile Ile Ala Gly Ala Gly Lys Leu Gly Ala Val Thr Val Ala Thr Asn
 610 615 620
 Met Ala Gly Arg Gly Thr Asp Ile Lys Leu Asp Asn Glu Ala Val Ile
 625 630 635 640
 Val Gly Gly Leu His Val Ile Gly Thr Thr Arg His Gln Ser Arg Arg
 645 650 655
 Ile Asp Arg Gln Leu Arg Gly Arg Cys Ala Arg Leu Gly Asp Pro Gly
 660 665 670
 Ala Ala Lys Phe Phe Leu Ser Phe Glu Asp Arg Leu Met Arg Leu Phe
 675 680 685
 Ala Ser Pro Lys Leu Asn Thr Leu Ile Arg His Phe Arg Pro Pro Glu
 690 695 700
 Gly Glu Ala Met Ser Asp Pro Met Phe Asn Arg Leu Ile Glu Thr Ala
 705 710 715 720
 Gln Lys Arg Val Glu Gly Arg Asn Tyr Thr Ile Arg Lys His Thr Leu
 725 730 735
 Glu Tyr Asp Asp Val Met Asn Lys Gln Arg Gln Ala Ile Tyr Ala Phe
 740 745 750
 Arg His Asp Val Leu His Ala Glu Ser Val Phe Asp Leu Ala Lys Glu
 755 760 765
 Ile Leu Cys His Val Ser Leu Met Val Ala Ser Leu Val Met Ser Asp
 770 775 780
 Arg Gln Phe Lys Gly Trp Thr Leu Pro Asn Leu Glu Glu Trp Ile Thr
 785 790 795 800
 Ser Ser Phe Pro Ile Ala Leu Asn Ile Glu Glu Leu Arg Gln Leu Lys
 805 810 815
 Asp Thr Asp Ser Ile Ala Glu Lys Ile Ala Ala Glu Leu Ile Gln Glu
 820 825 830
 Phe Gln Val Arg Phe Asp His Met Val Glu Gly Leu Ser Lys Ala Gly
 835 840 845
 Gly Glu Glu Leu Asp Ala Ser Ala Ile Cys Arg Asp Val Val Arg Ser
 850 855 860
 Val Met Val Met His Ile Asp Glu Gln Trp Arg Ile His Leu Val Asp
 865 870 875 880
 Met Asp Leu Leu Arg Ser Glu Val Gly Leu Arg Thr Val Gly Gln Lys
 885 890 895
 Asp Pro Leu Leu Glu Phe Lys His Glu Ser Phe Leu Leu Phe Glu Ser
 900 905 910
 Leu Ile Arg Asp Ile Arg Ile Thr Ile Ala Arg His Leu Phe Arg Leu
 915 920 925
 Glu Leu Thr Val Glu Pro Asn Pro Arg Val Asn Asn Val Ile Pro Thr
 930 935 940
 Val Ala Thr Ser Phe His Asn Asn Val Asn Tyr Gly Pro Leu Glu Leu
 945 950 955 960
 Thr Val Val Thr Asp Ser Glu Asp Gln Asp 970
 965

<210>907

<211>487

<212>PRT

<213>Chlamydia pneumoniae

<400>907

Met Leu Lys Ile Ala Ile Leu Gly Arg Pro Asn Val Gly Lys Ser Ser
 1 5 10 15
 Leu Phe Asn Arg Leu Cys Lys Arg Ser Leu Ala Ile Val Asn Ser Gln
 20 25 30
 Glu Gly Thr Thr Arg Asp Arg Leu Tyr Gly Glu Leu His Ala Phe Gly
 35 40 45
 Val Pro Ala Gln Val Ile Asp Thr Gly Gly Val Asp His Asn Ser Glu
 50 55 60
 Asp Tyr Phe Gln Lys His Ile Tyr Asn Gln Ala Leu Thr Gly Ala Lys

65 70 75 80
 Glu Ala Asp Val Leu Leu Val Ile Asp Ile Arg Cys Gly Ile Thr
 85 90 95
 Glu Glu Asp Ala His Leu Ala Lys Leu Leu Leu Pro Leu Lys Lys Pro
 100 105 110
 Leu Ile Leu Val Ala Asn Lys Ala Asp Ser Arg Gln Glu Glu Leu Gln
 115 120 125
 Ile His Glu Thr Tyr Lys Leu Gly Ile Arg Asp Ile Val Val Thr Ser
 130 135 140
 Thr Ala His Asp Lys His Ile Asp Thr Leu Leu Gln Arg Ile Lys Leu
 145 150 155 160
 Val Ala Asn Leu Pro Glu Pro Arg Glu Glu Glu Glu Gly Leu Glu
 165 170 175
 Glu Leu Ser Val Asp Glu His Glu Glu Ser Glu Ala Ala Leu Pro Ser
 180 185 190
 Asn Thr Phe Pro Asp Phe Ser Glu Val Phe Thr Glu Gly Phe Ser Pro
 195 200 205
 Glu Glu Pro Cys Thr Ile Pro Glu Ser Pro Gln Gln Ala Pro Lys Thr
 210 215 220
 Leu Lys Ile Ala Leu Ile Gly Arg Pro Asn Val Gly Lys Ser Ser Ile
 225 230 235 240
 Ile Asn Gly Leu Leu Asn Glu Glu Arg Cys Ile Ile Asp Asn Thr Pro
 245 250 255
 Gly Thr Thr Arg Asp Asn Ile Asp Ile Leu Tyr Ser His Lys Asp Arg
 260 265 270
 Gln Tyr Leu Phe Ile Asp Thr Ala Gly Leu Arg Lys Met Lys Ser Val
 275 280 285
 Lys Asn Ser Ile Glu Trp Ile Ser Ser Ser Arg Thr Glu Lys Ala Ile
 290 295 300
 Ser Arg Ala Asp Ile Cys Leu Leu Val Ile Asp Ala Thr Gln Lys Leu
 305 310 315 320
 Ser Ser Tyr Glu Lys Arg Ile Leu Ser Leu Ile Ser Lys Arg Lys Lys
 325 330 335
 Pro His Ile Ile Leu Ile Asn Lys Trp Asp Leu Leu Glu Glu Val Arg
 340 345 350
 Met Glu His Tyr Cys Lys Asp Leu Arg Ala Thr Asp Pro Tyr Leu Gly
 355 360 365
 Gln Ala Lys Met Leu Cys Ile Ser Ala Thr Thr Lys Arg Asn Leu Lys
 370 375 380
 Lys Ile Phe Ser Ala Ile Asp Glu Leu His His Val Val Ser Asn Lys
 385 390 395 400
 Val Pro Thr Pro Ile Val Asn Lys Thr Leu Ala Ser Ala Leu His Arg
 405 410 415
 Asn His Pro Gln Val Ile Gln Gly Arg Arg Leu Arg Ile Tyr Tyr Ala
 420 425 430
 Ile Gln Lys Thr Thr Thr Pro Leu Gln Phe Leu Leu Phe Ile Asn Ala
 435 440 445
 Lys Ser Leu Leu Thr Lys His Tyr Glu Tyr Tyr Leu Lys Asn Thr Leu
 450 455 460
 Lys Ser Ser Phe Asn Leu Tyr Gly Ile Pro Phe Asp Leu Glu Phe Lys
 465 470 475 480
 Glu Lys Pro Lys Arg His Asn
 485

<210>908 -

<211>410

<212>PRT

<213>Chlamydia pneumoniae

<400>908

Met Thr Thr Ile Ala Ile Glu Ala Ala Lys Lys Val Leu Ile Lys Leu
 1 5 10 15
 Arg Asn Ala Gly Tyr Gln Ala Tyr Phe Val Gly Gly Cys Val Arg Asp
 20 25 30
 Met Leu Met Asn Arg Pro Leu Glu Asp Ile Asp Ile Ala Thr Asn Ala
 35 40 45

Ser Pro Thr Ile Val Ser Thr Ile Phe Pro Asp Val Ile Ser Ile Gly
 50 55 60
 Val Ala Phe Gly Ile Ile Val Val Lys Gln Asp Gly Arg Leu Phe Glu
 65 70 75 80
 Val Ala Thr Phe Arg Ser Asp Gly Glu Tyr Lys Asp Gly Arg His Pro
 85 90 95
 Asp Arg Ile Ile Phe Ser Ser Met Arg Glu Asp Ala Leu Arg Arg Asp
 100 105 110
 Phe Thr Val Asn Gly Met Tyr Tyr Asp Pro Phe Glu Asp Lys Val Phe
 115 120 125
 Asp Phe Val Glu Gly Thr Arg Asp Ile Glu Lys Lys Val Ile Arg Ala
 130 135 140
 Ile Gly His Pro Arg Leu Arg Phe Ser Glu Asp Lys Leu Arg Ile Leu
 145 150 155 160
 Arg Ala Ile Arg Phe Ser Ser Ser Leu Gly Phe Thr Leu Asp Pro Thr
 165 170 175
 Thr Glu Arg Ala Ile Ile Lys Glu Ala Pro Ala Leu Val Asn Ser Val
 180 185 190
 Ser Pro Glu Arg Ile Trp Gln Glu Leu Lys Lys Met Leu Lys Arg Gln
 195 200 205
 Pro Tyr Gly Ala Leu Ser Leu Leu Lys Leu Lys Val Leu Ile Phe
 210 215 220
 Ile Phe Pro Glu Leu Arg Asp Ile Pro Tyr Ser Leu Leu Arg Thr Thr
 225 230 235 240
 Ile Glu Phe Ala Arg Lys Phe Asn Pro Thr His Phe Pro Glu Ile Leu
 245 250 255
 Phe Leu Leu Pro Leu Phe Gln Gly Val Ser Glu Glu Ala Ala Thr Val
 260 265 270
 Ala Phe Gly Arg Leu Arg Ile Ser Asn Lys Glu Leu Lys Leu Ile Glu
 275 280 285
 Ser Trp Tyr Glu Ala Leu Pro His Phe Gln Asn Gln Ser Gly Asn Arg
 290 295 300
 Val Phe Trp Ala His Phe Leu Ala Ser Pro Thr Ala Pro Leu Phe Leu
 305 310 315 320
 Glu Leu Phe Ser Ala Leu Gln Lys Asp Pro Ser Arg Gln Gln His Phe
 325 330 335
 Ile Ser Arg Val Gln Glu Leu Glu Ser Arg Leu Glu Gln Phe Ile Leu
 340 345 350
 Arg Ile Lys Thr Ser Ser Pro Val Val Ser Ala Pro Asp Leu Ile Ala
 355 360 365
 Lys Gly Ile Ser Pro Gly Arg Leu Leu Gly Asp Leu Leu Arg Glu Ala
 370 375 380
 Glu Ile Leu Ser Ile Glu Asn Glu Cys Leu Asp Lys Glu Lys Ile Leu
 385 390 395 400
 Leu Leu Leu Gln Glu Lys Gly Phe Trp Lys
 405 410

<210>909

<211>185

<212>PRT

<213>Chlamydia pneumoniae

<400>909

Arg Val Tyr Pro Ser Gln Tyr Gly Lys Tyr Leu Ile Tyr Arg Arg Arg
 1 5 10 15
 Thr Phe Val Asn Leu Asp Lys Ile Ile Ala Lys Arg Leu Gly Lys Thr
 20 25 30
 Thr Ile Gly Phe Ser Asp Asp Gln Ala Asp Leu Ser Gln Lys Thr Arg
 35 40 45
 Asp His Leu Leu Ala Lys Val Glu Thr Glu Asp Leu Ile Ala Phe Gly
 50 55 60
 Met Ile Pro Glu Phe Val Gly Arg Phe Asn Cys Ile Val Asn Cys Glu
 65 70 75 80
 Glu Leu Ser Leu Asp Glu Leu Val Ala Ile Leu Thr Glu Pro Thr Asn
 85 90 95
 Ala Ile Val Lys Gln Tyr Met Glu Leu Phe Ala Glu Glu Asn Val Lys

100 105 110
 Leu Val Phe Lys Lys Glu Ala Leu Tyr Ala Ile Ala Lys Lys Ala Lys
 115 120 125
 Gln Ala Lys Thr Gly Ala Arg Ala Leu Gly Met Ile Leu Glu Asn Leu
 130 135 140
 Leu Arg Asp Leu Met Phe Glu Ile Pro Ser Asp Pro Thr Val Glu Ala
 145 150 155 160
 Ile His Ile Gln Glu Asp Thr Ile Ala Glu Asn Lys Ala Pro Ile Ile
 165 170 175
 Ile Arg Arg Thr Pro Glu Ala Ile Ala
 180 185

<210>910

<211>256

<212>PRT

<213>Chlamydia pneumoniae

<400>910

Met Asn Lys Lys Asn Leu Thr Ile Cys Ser Phe Cys Gly Arg Ser Glu
 1 5 10 15
 Lys Asp Val Glu Lys Leu Ile Ala Gly Pro Ser Val Tyr Ile Cys Asp
 20 25 30
 Tyr Cys Ile Lys Leu Cys Ser Gly Ile Leu Asp Lys Lys Pro Ser Ser
 35 40 45
 Thr Ile Ser Ser Ala Pro Val Ser Glu Thr Pro Ser Gln Pro Ser Asp
 50 55 60
 Leu Arg Val Leu Thr Pro Lys Glu Ile Lys Lys His Ile Asp Glu Tyr
 65 70 75 80
 Val Ile Gly Gln Glu Arg Ala Lys Lys Thr Ile Ala Val Ala Val Tyr
 85 90 95
 Asn His Tyr Lys Arg Ile Arg Ala Leu Leu His Asn Lys Gln Val Ser
 100 105 110
 Tyr Gly Lys Ser Asn Val Leu Leu Leu Gly Pro Thr Gly Ser Gly Lys
 115 120 125
 Thr Leu Ile Ala Lys Thr Leu Ala Lys Ile Leu Asp Val Pro Phe Thr
 130 135 140
 Ile Ala Asp Ala Thr Thr Leu Thr Glu Ala Gly Tyr Val Gly Glu Asp
 145 150 155 160
 Val Glu Asn Ile Val Leu Arg Leu Leu Gln Ala Ala Asp Tyr Asp Val
 165 170 175
 Ala Arg Ala Glu Arg Gly Ile Ile Tyr Ile Asp Glu Ile Asp Lys Ile
 180 185 190
 Gly Arg Thr Thr Ala Asn Val Ser Ile Thr Arg Asp Val Ser Gly Glu
 195 200 205
 Gly Val Gln Gln Ala Leu Leu Lys Ile Val Glu Gly Thr Thr Ala Asn
 210 215 220
 Val Pro Pro Lys Gly Gly Arg Lys His Pro Asn Gln Glu Tyr Ile Arg
 225 230 235 240
 Val Asn Thr Glu Asn Ile Leu Phe Ile Val Gly Gly Leu Ser Ser Thr
 245 250 255

<210>911

<211>116

<212>PRT

<213>Chlamydia pneumoniae

<400>911

Cys Lys Tyr Leu Leu His Arg Ser Ser Cys Ile His Gly Ser Pro Leu
 1 5 10 15
 Ile Ile Arg Arg Thr Lys Gly Lys Arg His Ala Leu Pro His Ser Arg
 20 25 30
 Met Met Ile His Gln Pro Ser Gly Gly Ile Ile Gly Thr Ser Ala Asp
 35 40 45
 Ile Gln Leu Gln Ala Ala Glu Ile Leu Thr Leu Lys Lys His Leu Ala
 50 55 60
 Asn Ile Leu Ser Glu Cys Thr Gly Gln Pro Val Glu Lys Ile Ile Glu
 65 70 75 80
 Asp Ser Glu Arg Asp Phe Phe Met Gly Ala Glu Glu Ala Ile Ser Tyr

85 90 95
 Gly Leu Ile Asp Lys Val Val Thr Ser Ala Lys Glu Thr Asn Lys Asp
 -100 105 110
 Thr Ser Ser Thr
 115
 <210>912
 <211>119
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>912
 Met Thr Leu Val Pro Tyr Val Val Glu Asp Thr Gly Arg Gly Glu Arg
 1 5 10 15
 Ala Met Asp Ile Tyr Ser Arg Leu Leu Lys Asp Arg Ile Val Met Ile
 20 25 30
 Gly Gln Glu Ile Thr Glu Pro Leu Ala Asn Thr Val Ile Ala Gln Leu
 35 40 45
 Leu Phe Leu Met Ser Glu Asp Pro Lys Lys Asp Ile Gln Ile Phe Ile
 50 55 60
 Asn Ser Pro Gly Gly Tyr Ile Thr Ala Gly Leu Ala Ile Tyr Asp Thr
 65 70 75 80
 Ile Arg Phe Leu Gly Cys Asp Val Asn Thr Tyr Cys Ile Gly Gln Ala
 85 90 95
 Ala Ser Met Gly Ala Leu Leu Leu Ser Ala Glu Leu Lys Glu Ser Val
 100 105 110
 Thr Leu Phe Pro Ile Ala Val
 115
 <210>913
 <211>98
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>913
 Lys Lys Lys Ser Glu Leu Ile Lys Glu Ala Glu Glu Asp Ala Thr Lys
 1 5 10 15
 Ala Leu Lys Leu Leu Phe Leu Thr His Lys Ile Phe Ser Asp Glu Lys
 20 25 30
 Leu Thr Ile Ser Arg Glu Glu Leu Gln Tyr Met Met Asp Val Cys Ser
 35 40 45
 Arg Glu Arg Phe Gly Gln Gln Pro Pro Lys Asp Ile Ser Asn Asp Thr
 50 55 60
 Leu Gln Glu Leu Val Met Ser Ala Arg Asp Arg Leu Thr Tyr Ser Lys
 65 70 75 80
 Ala Ile Glu His Val Leu Arg Lys Ala Glu Leu Leu Ala Ser Thr Pro
 85 90 95
 Ser Ala
 <210>914
 <211>240
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>914
 Lys Ala Phe Pro Ala Ile Ser Asp Leu Pro Trp Glu Asn Leu Ser Leu
 1 5 10 15
 Pro Gln Glu Glu Ala Ala Ser Glu Ile Ser Asp Ser Asp Ile Glu Lys
 20 25 30
 Gly Leu Thr Asn Ile Gly Met Phe Phe Ala Thr Lys Thr Pro Val Glu
 35 40 45
 Arg Pro Ser Gln Glu Gly Asp Phe Ile Ser Ile Ser Leu His Val Ser
 50 55 60
 Lys Ser Asn Asp Glu Asn Ala Ser Ser Ala Ala Ile Phe Glu Asn Lys
 65 70 75 80
 Tyr Phe Lys Leu Ser Glu Glu Glu Met Thr Asp Ala Phe Lys Glu Lys
 85 90 95
 Phe Leu Gly Ile Ser Thr Gly His Arg Val Val Glu Thr Ile Thr Ser
 100 105 110

Pro Glu Ile Gln Ser Phe Leu Arg Gly Asp Thr Leu Thr Phe Thr Val
 115 120 125
 Asn Ala Val Ile Glu Val Ser Ile Pro Glu Ile Asp Asp Glu Lys Ala
 130 135 140
 Arg Gln Leu Gln Ala Glu Ser Leu Asp Asp Leu Lys Ala Lys Leu Arg
 145 150 155 160
 Ile Gln Leu Glu Lys Gln Ala Lys Asp Lys Gln Leu Gln Lys Arg Phe
 165 170 175
 Ser Glu Ala Glu Asp Ala Leu Ala Met Leu Val Asp Phe Glu Leu Pro
 180 185 190
 Thr Ser Leu Leu Glu Glu Arg Ile Ser Leu Ile Thr Arg Glu Lys Leu
 195 200 205
 Leu Asn Ala Arg Leu Ile Gln Tyr Cys Ser Asp Glu Leu Glu Lys
 210 215 220
 Arg Asn Gln Asn Leu Ser Arg Lys Gln Lys Lys Met Leu Gln Lys His
 225 230 235 240

<210>915

<211>186

<212>PRT

<213>Chlamydia pneumoniae

<400>915

Val Gln Ala Ser Ser Pro Ala Phe Pro Phe Lys Ser Asn Lys Lys Gly
 1 5 10 15
 Cys Leu Val Pro Arg Ser Leu Ser Asn Glu Gln Phe Ser Val Asp Leu
 20 25 30
 Glu Glu Ser Pro Gly Cys Ile Val Ser Ala Leu Val Lys Val Ser Pro
 35 40 45
 Glu Val Leu Asn Lys Leu Asn Lys Gln Ala Leu Lys Lys Ile Lys Lys
 50 55 60
 Glu Ile Thr Leu Pro Gly Phe Arg Lys Gly Lys Ala Pro Asp Asp Val
 65 70 75 80
 Ile Ala Ser Arg Tyr Pro Thr Asn Val Arg Lys Glu Leu Gly Glu Leu
 85 90 95
 Val Thr Gln Asp Ala Tyr His Ala Leu Ser Thr Val Gly Asp Arg Arg
 100 105 110
 Pro Leu Ser Pro Lys Ala Val Arg Ser Asn Ser Ile Thr Gln Phe Asp
 115 120 125
 Leu Gln Glu Gly Ala Lys Val Glu Phe Ser Tyr Glu Lys Leu Ser Leu
 130 135 140
 Gln Phe Leu Ile Phe Leu Gly Lys Thr Phe Leu Tyr Leu Arg Lys Lys
 145 150 155 160
 Leu Leu Val Arg Phe Gln Ile Val Ile Ser Arg Arg Asp Ser Gln Thr
 165 170 175
 Leu Val Cys Ser Leu Gln Gln Lys Leu Leu
 180 185

<210>916

<211>1075

<212>PRT

<213>Chlamydia pneumoniae

<400>916

Ala Asp Tyr Ile Ile His Ser Tyr Ser Arg Gly Glu Met Leu Asn Phe
 1 5 10 15
 Arg Lys Leu Arg Arg Asp Phe Ser Ala Asn Ile Leu Gln Asp Gly Lys
 20 25 30
 Lys Leu Phe Glu Gln Gly Ala Val Ile Asp Ala Lys Ile Leu Ser Met
 35 40 45
 Asn Gly Glu Thr Val Cys Ile Ser Ala Gln Val Arg Gly Leu Tyr Asp
 50 55 60
 Asn Ile Tyr Glu Cys Glu Ile Glu Val Asp Arg Ser Glu Ser Asp Thr
 65 70 75 80
 Val Asp Ser Asn Cys Asp Cys Ser Tyr Asn Tyr Asp Cys Gln His Ile
 85 90 95
 Val Ala Leu Leu Phe Tyr Leu Glu Gln Tyr Phe Asn Glu Met Val Val
 100 105 110

Ala Tyr Ala Arg Ser Ala Asp Leu Glu Thr Asp His Glu Ile Asn Glu
 115 120 125
 Glu Val Lys Lys Glu Leu Lys Glu Thr Phe Val Ala Ala Thr Lys
 130 135 140
 Glu Glu Glu Arg Lys Asp Arg Glu His Gln Lys Glu Ile Leu Arg Glu
 145 150 155 160
 Tyr Val His Ala Ala Asn Ala Leu Ser Ala Asn Pro Phe Phe Leu Pro
 165 170 175
 Leu Glu Tyr Leu Glu Lys Asp Ser Ala Glu Leu Ala Val Leu Phe Val
 180 185 190
 Ser Val Asn Glu Asp Thr Phe Ala Pro Ala Asn Gln Pro Ile Glu Phe
 195 200 205
 Gln Leu Val Leu Arg Leu Pro Cys Arg Ser Lys Pro Phe Tyr Ile Ser
 210 215 220
 Asn Ile Arg Thr Phe Leu Glu Gly Val Leu Tyr Gln Glu Pro Ile Val
 225 230 235 240
 Leu Asn Gly Arg Arg Phe Phe Phe Thr Met Gln Ser Phe Asn Ala Ser
 245 250 255
 Asp Arg Lys Leu Ile Asp Leu Leu Ile Arg Tyr Val Arg Tyr Pro Asn
 260 265 270
 His Thr Thr Glu Glu Lys Leu Leu Lys Ser Ala Tyr Leu Met Pro Pro
 275 280 285
 Ala Leu Gly Val Ile Leu Ala Lys Met Phe Glu His Gln Leu Ala Asp
 290 295 300
 Arg Gly Gly Gly Ser Leu Gly Glu Lys Glu Ser Phe Ser Gly Leu Phe
 305 310 315 320
 Cys Gly Asn Leu Glu Glu Pro Leu Cys Trp Ser Leu Thr Pro Ala Lys
 325 330 335
 Met Lys Phe Asn Leu Asp Phe Phe Asp Met Pro Tyr Lys Ala Leu Leu
 340 345 350
 Met Thr Pro Val Ile Leu Val Asp Asp Asp Glu Val Gln Pro Glu Gln
 355 360 365
 Thr Met Leu Leu Glu Ser Asp Ala Pro Gly Ile Ile His His Phe Val
 370 375 380
 Tyr His Arg Phe Ser Pro Gln Ile Lys Arg Ala His Leu Arg Ser Phe
 385 390 395 400
 Ser Arg Leu Arg Asp Ile Ala Ile Pro Glu Ala Leu Phe Gly Ser Phe
 405 410 415
 Arg Glu Asn Ala Leu Pro Val Phe Gln Glu Tyr Ala Glu Ile Ala Asn
 420 425 430
 Val His Leu Leu Asn Ser Phe Val Thr Leu Pro Tyr Val Asp Glu Val
 435 440 445
 Arg Ala Ile Cys Asp Met Ser Tyr Leu Asp Gly Glu Leu Glu Ala Lys
 450 455 460
 Leu His Phe Leu Tyr Gly Ser Leu Arg Val Pro Ala Ala Ser Leu Ala
 465 470 475 480
 Leu Gln Tyr Gln Asp Val Arg Ala Phe Ile Ser Asp Glu Gly Ile Leu
 485 490 495
 Ala Arg Asn Leu Val Glu Glu Arg Lys Met Leu Glu Glu Val Phe Ser
 500 505 510
 Gly Phe Ile Tyr Asp Glu Arg Asp Gly Ala Phe Arg Val Lys Ser Glu
 515 520 525
 Lys Lys Ile Val Glu Phe Met Thr Glu Thr Ile Pro Ala Asn Gln His
 530 535 540
 Arg Ile Thr Phe Asn Cys Pro Glu Asn Leu Ser Gly Gln Phe Ile Tyr
 545 550 555 560
 Asp Glu Thr Ile Phe Glu Leu Ser Phe Arg Glu Gly Ser Asp Ile Asn
 565 570 575
 Tyr Tyr Glu Ala Asp Leu Lys Val His Gly Leu Leu Lys Gly Val Pro
 580 585 590
 Leu Asp Leu Leu Trp Asp Cys Ile Ser Ala Lys Lys Arg Phe Leu Glu
 595 600 605
 Leu Pro Lys Ala Gly Gln Gln Ser Lys Gly Thr Arg Arg Gly Lys Val
 610 615 620

Asn Ser Gly Lys Leu Pro Cys Ile Leu Val Leu Asp Leu Glu Lys Ile
 625 630 635 640
 Ala Pro Val-Val Gln Ile Phe Asn Glu Ile Gly Phe Lys Val Leu Asp
 645 650 655
 Asp Leu Val Gln Lys Cys Pro Leu Trp Ser Leu Thr Gly Ile Ser Leu
 660 665 670
 Asp Gln Phe Glu Ala Leu Pro Val Asn Phe Ser Met Ser Glu Arg Leu
 675 680 685
 Ile Glu Ile Gln Lys Gln Ile Arg Gly Glu Ile Glu Phe Asp Phe Gln
 690 695 700
 Asp Val Pro Gln Gln Ile Gln Ala Thr Leu Arg Ser Tyr Gln Thr Glu
 705 710 715 720
 Gly Val His Trp Leu Glu Arg Leu Arg Lys Met His Leu Asn Gly Ile
 725 730 735
 Leu Ala Asp Asp Met Gly Leu Gly Lys Thr Leu Gln Ala Ile Ile Ala
 740 745 750
 Val Thr Gln Ser Lys Leu Glu Lys Gly Ser Gly Cys Ser Leu Ile Val
 755 760 765
 Cys Pro Thr Ser Leu Val Tyr Asn Trp Lys Glu Glu Phe Arg Lys Phe
 770 775 780
 Asn Pro Glu Phe Arg Thr Leu Val Ile Asp Gly Val Pro Ser Gln Arg
 785 790 795 800
 Arg Lys Gln Leu Thr Ala Leu Ala Asp Arg Asp Val Ala Ile Thr Ser
 805 810 815
 Tyr Asn Leu Leu Gln Lys Asp Val Glu Leu Tyr Lys Ser Phe Arg Phe
 820 825 830
 Asp Tyr Val Val Leu Asp Glu Ala His His Ile Lys Asn Arg Thr Thr
 835 840 845
 Arg Asn Ala Lys Ser Val Lys Met Ile Gln Ser Asp His Arg Leu Ile
 850 855 860
 Leu Thr Gly Thr Pro Ile Glu Asn Ser Leu Glu Glu Leu Trp Ser Leu
 865 870 875 880
 Phe Asp Phe Leu Met Pro Gly Leu Leu Ser Tyr Asp Arg Phe Val
 885 890 895
 Gly Lys Tyr Ile Arg Thr Gly Asn Tyr Met Gly Asn Lys Ala Asp Asn
 900 905 910
 Met Val Ala Leu Lys Lys Lys Val Ser Pro Phe Ile Leu Pro Arg Met
 915 920 925
 Lys Glu Asp Val Leu Lys Asp Leu Pro Pro Val Ser Glu Ile Leu Tyr
 930 935 940
 His Cys His Leu Thr Glu Ser Gln Lys Glu Leu Tyr Gln Ser Tyr Ala
 945 950 955 960
 Ala Ser Ala Lys Lys Glu Leu Ser Arg Leu Val Lys Gln Glu Gly Phe
 965 970 975
 Glu Arg Ile His Ile His Val Leu Ala Thr Leu Thr Arg Leu Lys Gln
 980 985 990
 Ile Cys Cys His Pro Ala Ile Phe Ala Lys Asp Ala Pro Glu Pro Gly
 995 1000 1005
 Asp Ser Ala Lys Tyr Asp Met Leu Met Asp Leu Leu Ser Ser Leu Val
 1010 1015 1020
 Asp Ser Gly His Lys Thr Val Val Phe Ser Gln Tyr Thr Lys Met Leu
 1025 1030 1035 1040
 Gly Ile Ile Lys Lys Asp Leu Glu Ser Arg Gly Ile Pro Phe Val Tyr
 1045 1050 1055
 Leu Asp Gly Ser Thr Lys Asn Arg Leu Asp Leu Val Asn Gln Phe Asn
 1060 1065 1070
 Glu Asp Thr
 1075

<210>917

<211>366

<212>PRT

<213>Chlamydia pneumoniae

<400>917

Met Ser Pro His Arg Asn Leu Phe Lys Leu Lys Asn Phe Ser Asn Arg

1 5 10 15
 Leu Tyr Asn Arg Ala Leu Gly Arg Phe Asp Lys Val Phe Asn Phe Phe
 - 20 25 30
 Ser Gly Asn Val Gly Ile Asp Leu Gly Thr Ala Asn Thr Leu Val Tyr
 35 40 45
 Val Arg Gly Arg Gly Ile Val Leu Ser Glu Pro Ser Val Val Ala Val
 50 55 60
 Asp Ala Gln Thr His Ala Val Leu Ala Val Gly His Lys Ala Lys Ala
 65 70 75 80
 Met Leu Gly Lys Thr Pro Arg Lys Ile Met Ala Val Arg Pro Met Lys
 85 90 95
 Asp Gly Val Ile Ala Asp Phe Glu Ile Ala Glu Gly Met Leu Lys Ala
 100 105 110
 Leu Ile Lys Arg Val Thr Pro Ser Arg Ser Val Phe Arg Pro Arg Ile
 115 120 125
 Leu Ile Ala Val Pro Ser Gly Ile Thr Gly Val Glu Lys Arg Ala Val
 130 135 140
 Glu Asp Ser Ala Leu His Ala Gly Ala Gln Glu Val Ile Leu Ile Glu
 145 150 155 160
 Glu Pro Met Ala Ala Ala Ile Gly Val Asp Leu Pro Val His Glu Pro
 165 170 175
 Ala Ala Ser Met Ile Ile Asp Ile Gly Gly Thr Thr Glu Ile Ala
 180 185 190
 Ile Ile Ser Leu Gly Gly Ile Val Glu Ser Arg Ser Leu Arg Ile Ala
 195 200 205
 Gly Asp Glu Phe Asp Glu Cys Ile Ile Asn Tyr Met Arg Arg Thr Tyr
 210 215 220
 Asn Leu Met Ile Gly Pro Arg Thr Ala Glu Glu Ile Lys Ile Thr Ile
 225 230 235 240
 Gly Ser Ala Tyr Pro Leu Gly Asp Gln Glu Leu Glu Met Glu Val Arg
 245 250 255
 Gly Arg Asp Gln Val Ala Gly Leu Pro Ile Thr Lys Arg Ile Asn Ser
 260 265 270
 Val Glu Ile Arg Glu Cys Leu Ala Glu Pro Ile Gln Gln Ile Ile Glu
 275 280 285
 Cys Val Arg Leu Thr Leu Glu Lys Cys Pro Pro Glu Leu Ser Ala Asp
 290 295 300
 Leu Val Glu Arg Gly Met Val Leu Ala Gly Gly Gly Ala Leu Ile Lys
 305 310 315 320
 Gly Leu Asp Lys Ala Leu Ser Lys Asn Thr Gly Leu Ser Val Ile Thr
 325 330 335
 Ala Pro His Pro Leu Leu Ala Val Cys Leu Gly Thr Gly Lys Ala Leu
 340 345 350
 Glu His Leu Asp Gln Phe Lys Lys Arg Lys Gly Asn Leu Val
 355 360 365

<210>918

<211>579

<212>PRT

<213>Chlamydia pneumoniae

<400>918

Ile Asn Asp Ser Glu Asp Ile Arg Leu Cys Asp Gly Ser Asp Thr Glu
 1 5 10 15
 Tyr Asp Glu Leu Cys Thr Leu Met Glu Ser Thr Gly Thr Met Ile Arg
 - 20 25 30
 Leu Asn Pro Glu Phe His Pro Asn Cys Phe Leu Val Arg Ser Ser Ala
 35 40 45
 Asp Asp Val Ala Arg Val Glu Gln Phe Thr Phe Ile Cys Thr Ser Thr
 50 55 60
 Glu Ala Glu Ala Gly Pro Thr Asn Asn Trp Arg Asp Pro Gln Glu Met
 65 70 75 80
 Arg Arg Glu Leu His Gln Leu Phe Arg Gly Cys Met Gln Gly Arg Thr
 85 90 95
 Leu Tyr Ile Val Pro Phe Cys Met Gly Pro Leu Asp Ser Pro Phe Ser
 100 105 110


```

Ile Val Gly Val Glu Leu Thr Asp Ser Pro Tyr Val Val Cys Ser Met
      115              120              125
Lys Ile Met Thr Arg Met Gly Asp Asp Val Leu Arg Ser Leu Gly Thr
      130              135              140
Ser Gly Lys Phe Leu Lys Cys Leu His Ser Val Gly Lys Pro Leu Ser
      145              150              155              160
Pro Gly Glu Ala Asp Val Ser Trp Pro Cys Asn Pro Lys Ser Met Arg
      165              170              175
Ile Val His Phe Gln Asp Asp Ser Ser Val Met Ser Phe Gly Ser Gly
      180              185              190
Tyr Gly Gly Asn Ala Leu Leu Gly Lys Lys Cys Val Ala Leu Arg Leu
      195              200              205
Ala Ser Tyr Met Ala Lys Ser Gln Gly Trp Leu Ala Glu His Met Leu
      210              215              220
Ile Ile Gly Ile Thr Asn Pro Glu Gly Lys Lys Lys Tyr Phe Ser Ala
      225              230              235              240
Ser Phe Pro Ser Ala Cys Gly Lys Thr Asn Leu Ala Met Leu Met Pro
      245              250              255
Lys Leu Pro Gly Trp Lys Ile Glu Cys Ile Gly Asp Asp Ile Ala Trp
      260              265              270
Ile Arg Pro Gly Arg Asp Gly Arg Leu Tyr Ala Val Asn Pro Glu Tyr
      275              280              285
Gly Phe Phe Gly Val Ala Pro Gly Thr Ser Glu Arg Thr Asn Pro Asn
      290              295              300
Ala Leu Ala Thr Cys Arg Ser Asn Ser Ile Phe Thr Asn Val Ala Leu
      305              310              315              320
Thr Ala Asp Gly Asp Val Trp Trp Glu Gly Leu Thr Glu Gln Pro Pro
      325              330              335
Glu Pro Leu Thr Asp Trp Leu Gly Lys Pro Trp Lys Pro Gly Gly Ser
      340              345              350
Pro Ala Ala His Pro Asn Ser Arg Phe Thr Ala Pro Leu Arg Gln Cys
      355              360              365
Pro Ser Leu Asp Pro Glu Trp Asn Ser Pro Gln Gly Val Pro Leu Asp
      370              375              380
Ala Ile Ile Phe Gly Gly Arg Arg Ser Glu Thr Ile Pro Leu Val Tyr
      385              390              395              400
Glu Ala Leu Ser Trp Glu His Gly Val Thr Ile Gly Ala Gly Met Ser
      405              410              415
Ser Thr Thr Thr Ala Ala Ile Val Gly Gln Leu Gly Lys Leu Arg His
      420              425              430
Asp Pro Phe Ala Met Leu Pro Phe Cys Gly Tyr Asn Met Ala Tyr Tyr
      435              440              445
Phe Gln His Trp Leu Ser Phe Ala Glu Asn Arg Ser Leu Lys Leu Pro
      450              455              460
Lys Ile Phe Gly Val Asn Trp Phe Arg Lys Asn Asn Gln Gly Glu Phe
      465              470              475              480
Leu Trp Pro Gly Phe Ser Glu Asn Leu Arg Val Leu Glu Trp Ile Phe
      485              490              495
Gln Arg Thr Asp Gly Leu Glu Asp Ile Ala Glu Arg Thr Pro Ile Gly
      500              505              510
Tyr Leu Pro Asn Ile Gln Lys Phe Asn Leu Asn Gly Leu Asn Leu Asp
      515              520              525
Leu Gln Thr Val Gln Glu Leu Phe Ser Val Asp Ala Glu Gly Trp Leu
      530              535              540
Ala Glu Val Glu Asn Ile Gly Glu Tyr Leu Lys Ile Phe Gly Ser Asp
      545              550              555              560
Cys Pro Gln Gln Ile Thr Asp Glu Leu Leu Arg Ile Lys Ser Glu Leu
      565              570              575
Lys Glu Lys

```

<210>919

<211>150

<212>PRT

<213>Chlamydia pneumoniae

<400>919

Arg Lys Gly Ala Val Asn Arg Glu Phe Gly Trp Ala Ala Gly Leu Pro
 1 5 10 15
 Pro Gly Phe Gln Gly Phe Pro Ser Gln Ser Val Lys Gly Ser Gly Gly
 20 25 30
 Cys Ser Val Asn Pro Ser His Gln Thr Ser Pro Ser Ala Val Lys Ala
 35 40 45
 Thr Phe Val Lys Ile Glu Phe Asp Leu Gln Val Ala Lys Ala Leu Gly
 50 55 60
 Phe Val Arg Ser Glu Val Pro Gly Ala Thr Pro Lys Asn Pro Tyr Ser
 65 70 75 80
 Gly Phe Thr Ala Tyr Asn Leu Pro Ser Arg Pro Gly Arg Ile Gln Ala
 85 90 95
 Ile Ser Ser Pro Ile His Ser Ile Phe Gln Pro Gly Ser Leu Gly Ile
 100 105 110
 Asn Ile Ala Lys Phe Val Leu Pro Gln Ala Leu Gly Asn Glu Ala Glu
 115 120 125
 Lys Tyr Phe Phe Phe Pro Ser Gly Leu Val Ile Pro Ile Ile Asn Met
 130 135 140
 Cys Ser Ala Ser Gln Pro
 145 150

<210>920

<211>780

<212>PRT

<213>Chlamydia pneumoniae

<400>920

Ile Lys Leu Arg Ile Ile Asp Tyr Tyr Tyr Leu Ile Asn Thr Val Thr
 1 5 10 15
 Leu Gln Pro Ser Tyr Ile Asn Phe Thr Pro Asn Val Thr Thr Ala Leu
 20 25 30
 Ser Gly Gly Lys Ile Asp Thr Ser Ala Ile Glu Leu Ser Cys Ser Ala
 35 40 45
 Leu Phe Phe Gln Glu Leu Gln Asp Lys Ala Gln Gly Leu Lys His Ala
 50 55 60
 Leu Gly Leu Val Gln Glu Leu Ser Ala Glu Ala Leu Arg Pro Ala Gln
 65 70 75 80
 Val Gln Thr Ser Ile Ser Tyr Leu Pro Thr Glu Glu Ser Ser Arg Pro
 85 90 95
 Gly Ile Ser Ala Gly Ile Ile Asp Arg Thr Met Pro Thr Phe Thr Asp
 100 105 110
 Asp Glu Val Lys Ala Ile Leu Gln Asn Pro Asn Phe Glu Thr Ser Lys
 115 120 125
 Ile Phe Val Glu Gly Leu Asp Lys Val Phe Lys Ser Tyr Leu Asp Ser
 130 135 140
 Val Thr Pro Pro Glu Gly Ile Asp Pro Ser Asn Pro Glu Ser Ala Ile
 145 150 155 160
 Ile Leu Asn Tyr Ile Thr Leu Leu Asn Asn Leu Lys Pro Lys Phe Ala
 165 170 175
 Ala Gly Ser Thr Pro Thr Asp Ala Asp Tyr Asn Ala Leu Tyr Ala Leu
 180 185 190
 Pro Gly Asp Phe Val Lys Glu Ile Glu Ala Leu Lys Ala Ala Asp Ala
 195 200 205
 Pro Pro Lys Ser Lys Val His Ala Phe Trp Gln Glu Ile Met Thr Ile
 210 215 220
 Tyr Asn Asn Met Gln Val Leu Ser Tyr Pro Val Thr Asp Tyr Leu Asn
 225 230 235 240
 Val Gln Ile Ala Asp Leu Ser Leu Asn Ile Thr Ala Ala Gln Glu Val
 245 250 255
 Gln Gln Tyr Leu Lys Asn Phe Tyr Ser Ile Leu Lys Asp Ile Leu Asn
 260 265 270
 Pro Gly Trp Thr Asp Pro Gln Ala Thr His Tyr Pro Ala Asp Ala Glu
 275 280 285
 Tyr Asn Ala Arg Asp Ala Gly Val Ile Gln Ser Leu Leu Asn Leu Ser
 290 295 300

WO 99/27105

PCT/IB98/01890

Gly Asn Tyr Arg Gln Leu Thr Glu Asn Met Leu Pro Asn Thr Asp Thr
 305 310 315 320
 Ser Leu Pro Gln Glu Ile Ile Ala Gln Ile Arg Ser Phe Gln Asn Gly
 325 330 335
 Val Asn Gly Thr Ile Ile Ala Ser Asn Thr Leu Leu Pro Thr Thr Met
 340 345 350
 Arg Leu Asp Thr Leu Leu Gly Val Ile Tyr Thr Tyr Gln Cys Cys Ala
 355 360 365
 Thr Ile Phe Gly Met Ser Tyr Gly Thr Ser Thr Pro Ala Lys Gln Asn
 370 375 380
 Tyr Ile Asp Ala Ile Asn Gln Glu Lys Ser Tyr Trp Gln Ala Arg Ala
 385 390 395 400
 Asn Gly Phe Asp Val Thr Ser Asp Gln Val Phe Asp Gln Phe Ala Thr
 405 410 415
 Asn Ile Gln Ser Gly Thr Ser Tyr Arg Gly Ile Asp Leu Phe Lys Asn
 420 425 430
 Asn Lys Val Asn Glu Ile Asn Pro Ile Phe Leu Ser Gln Ala Ala Ser
 435 440 445
 Phe Leu Arg Tyr Pro Tyr Asn Leu Met Ser Arg Ser Met Tyr Gln Thr
 450 455 460
 Ile Glu Asp Ala Ala Asn Arg Ser Ile Thr Ala Leu Asp Gly Leu Ile
 465 470 475 480
 Ser Gly Trp Ser Thr Gln Ile Ala Thr Phe Gln Thr Gln Lys Asn Ser
 485 490 495
 Leu Asp Pro Ser Leu Leu Lys Tyr Phe Asp Thr Met Lys Ala Asn Lys
 500 505 510
 Glu Ser Phe Val Thr Thr Ala Pro Leu Gln Met Val Tyr Ser Ser Leu
 515 520 525
 Met Leu Asp Lys Tyr Leu Pro Thr Gln Gln Asn Val Ile Ala Ser Leu
 530 535 540
 Gly Ile Gln Met Thr Tyr Ser Asn Lys Ala Ala Lys Tyr Leu Asn Glu
 545 550 555 560
 Leu Ile Lys Glu Ile Thr Thr Phe Gln Ser Ala Asp Ile Tyr Tyr Ser
 565 570 575
 Leu Ser Ile Tyr Leu Lys Gln Met Asn Leu Gln Ala Val Ala Asp Pro
 580 585 590
 Ile Gly Lys Ala Val Gly Val Leu Asn Asp Glu Lys Thr Arg Ala Met
 595 600 605
 Ala Asp Ile Thr Arg Cys Asn Lys Ile Lys Ala Ala Ile Asp Lys Met
 610 615 620
 Leu Val Glu Ile Lys Ala Asp Ala Glu Leu Ser Lys Ser Gln Ile Arg
 625 630 635 640
 Glu Leu Val Asp Thr Leu Thr Asn Phe Lys Ser Gln Ser Asp Asp Leu
 645 650 655
 Ile Arg Asn Leu Ser Cys Leu Leu Gly Phe Leu Ser Gly Leu Thr Leu
 660 665 670
 Lys Ala Val Asn Asp Pro Asn Ala Thr Tyr Glu Ala Phe Thr Ala Glu
 675 680 685
 Ile Phe Thr Glu Pro Phe Asn Asn Trp Lys Arg Gln Leu Ala Thr Phe
 690 695 700
 Glu Ser Phe Val Ile Gln Gly Gly Gln Asn Gly Ile Thr Pro Gly Gly
 705 710 715 720
 Gln Gln Gln Leu Leu Gln Ala Met Glu Ser Ser Gln Gln Asp Phe Ser
 725 730 735
 Thr Phe Asn Gln Asn Gln Gln Leu Ala Leu Gln Leu Glu Ser Ser Ala
 740 745 750
 Met Gln Gln Glu Trp Thr Leu Val Ser Ala Ala Leu Ala Leu Asn
 755 760 765
 Gln Met Val Ser Lys Ile Ala Arg Arg Ile Lys Ser
 770 775 780
 <210>921
 <211>391
 <212>PRT
 <213>Chlamydia pneumoniae

<400>921

Asn Ile Met His Pro Lys Ile Glu Lys Arg Asn Ser Leu Pro Leu Thr
 1 5 10 15
 Ala Val Ala Pro Val Phe Glu Glu Ser Tyr His Pro Ser Val Ala Thr
 20 25 30
 Thr Val Asp Tyr Val Asp Ala Thr Thr Leu Ser Arg His Leu Thr Val
 35 40 45
 Leu Lys Asp Val Ile Lys Glu Ala Arg Asn Leu Asp Leu Gly Lys Ala
 50 55 60
 Phe Leu Thr Ser Met Lys Gln Gly Phe Ile Asn Thr Gly Thr Glu Leu
 65 70 75 80
 Ala Ile Ile Gln Ala Ser Leu Ala Asp Gln Ser Ser Arg Glu Ser Arg
 85 90 95
 Lys Lys Glu Glu Lys Ile Phe His Gln His Leu Gly Lys Ala Ala Pro
 100 105 110
 Gln Ala Ala Thr Ala Thr Ser Gly Val Gln Pro Thr Ala Asp Pro Val
 115 120 125
 Ala Asp Lys Met Pro Leu Gln Ser Ala Phe Ala Tyr Val Leu Leu Asp
 130 135 140
 Lys Tyr Ile Pro Ala Gln Glu Glu Ala Leu Tyr Ala Leu Gly Arg Glu
 145 150 155 160
 Leu Asn Leu Ser Gly Tyr Ala Gln Asn Leu Phe Ser Pro Leu Leu Asp
 165 170 175
 Met Ile Lys Ser Phe Asn Ser Ala Pro Ile Asn Tyr Asn Leu Gly Ser
 180 185 190
 Tyr Ile Ser Gln Thr Ser Gly Thr Ala Asn Phe Ala Tyr Gly Tyr Glu
 195 200 205
 Met Ile Leu Ser Arg Tyr Asn Asn Glu Val Ser Gln Cys Arg Leu Asp
 210 215 220
 Ile Ala Ser Thr Val Lys Ala Lys Ala Ala Leu Ala Asn Met Ser Ala
 225 230 235 240
 Ser Val Lys Ala Asn Val Ser Leu Thr Asp Ala Gln Lys Lys Gln Ile
 245 250 255
 Glu Asp Ile Ile Ala Ser Tyr Thr Lys Ser Leu Asp Val Ile His Thr
 260 265 270
 Gln Leu Thr Asp Val Met Thr Asn Leu Ala Ser Ile Thr Phe Val Pro
 275 280 285
 Gly Leu Asn Lys Tyr Asp Pro Ser Tyr Arg Ile Val Gly Gly Asp Leu
 290 295 300
 Ser Ile Ile Ala Leu Gln Asn Asp Glu Lys Val Leu Val Asp Gly Lys
 305 310 315 320
 Val Asp Ile Thr Thr Ala Val Asn Glu Gly Leu Leu Asn Phe Phe
 325 330 335
 Thr Thr Val Leu Thr Asp Val Gln Asn Tyr Gly Asp Leu Ala Gln Thr
 340 345 350
 Gln Gln Leu Met Leu Asp Leu Glu Leu Lys Ala Met Gln Gln Gln Trp
 355 360 365
 Ser Leu Val Ser Ala Ser Leu Lys Leu Leu Asn Gly Met Tyr Thr Thr
 370 375 380
 Val Ile Ser Gly Phe Lys Asn
 385 390

<210>922

<211>348

<212>PRT

<213>Chlamydia pneumoniae

<400>922

Gly Pro Phe Asp Met Asn Ser Lys Met Leu Lys His Leu Arg Leu Ala
 1 5 10 15
 Thr Leu Ser Phe Ser Met Phe Phe Gly Ile Val Ser Ser Pro Ala Val
 20 25 30
 Tyr Ala Leu Gly Ala Gly Asn Pro Ala Ala Pro Val Leu Pro Gly Val
 35 40 45
 Asn Pro Glu Gln Thr Gly Trp Cys Ala Phe Gln Leu Cys Asn Ser Tyr
 50 55 60

WO 99/27105

PCT/IB98/01890

Asp Leu Phe Ala Ala Leu Ala Gly Ser Leu Lys Phe Gly Phe Tyr Gly
 65 70 75 80
 Asp Tyr Val Phe Ser Glu Ser Ala His Ile Thr Asn Val Pro Val Ile
 85 90 95
 Thr Ser Val Thr Thr Ser Gly Thr Gly Thr Thr Pro Thr Ile Thr Ser
 100 105 110
 Thr Thr Lys Asn Val Asp Phe Asp Leu Asn Asn Ser Ser Ile Ser Ser
 115 120 125
 Ser Cys Val Phe Ala Thr Ile Ala Leu Gln Glu Thr Ser Pro Ala Ala
 130 135 140
 Ile Pro Leu Leu Asp Ile Ala Phe Thr Ala Arg Val Gly Gly Leu Lys
 145 150 155 160
 Gln Tyr Tyr Arg Leu Pro Leu Asn Ala Tyr Arg Asp Phe Thr Ser Asn
 165 170 175
 Pro Leu Asn Ala Glu Ser Glu Val Thr Asp Gly Leu Ile Glu Val Gln
 180 185 190
 Ser Asp Tyr Gly Ile Val Trp Gly Leu Ser Leu Gln Lys Val Leu Trp
 195 200 205
 Lys Asp Gly Val Ser Phe Val Gly Val Ser Ala Asp Tyr Arg His Gly
 210 215 220
 Ser Ser Pro Ile Asn Tyr Ile Ile Val Tyr Asn Lys Ala Asn Pro Glu
 225 230 235 240
 Ile Tyr Phe Asp Ala Thr Asp Gly Asn Leu Ser Tyr Lys Glu Trp Ser
 245 250 255
 Ala Ser Ile Gly Ile Ser Thr Tyr Leu Asn Asp Tyr Val Leu Pro Tyr
 260 265 270
 Ala Ser Val Ser Ile Gly Asn Thr Ser Arg Lys Ala Pro Ser Asp Ser
 275 280 285
 Phe Thr Glu Leu Glu Lys Gln Phe Thr Asn Phe Lys Phe Lys Ile Arg
 290 295 300
 Lys Ile Thr Asn Phe Asp Arg Val Asn Phe Cys Phe Gly Thr Thr Cys
 305 310 315 320
 Cys Ile Ser Asn Asn Phe Tyr Tyr Ser Val Glu Gly Arg Trp Gly Tyr
 325 330 335
 Gln Arg Ala Ile Asn Ile Thr Ser Gly Leu Gln Phe
 340 345

<210>923

<211>334

<212>PRT

<213>Chlamydia pneumoniae

<400>923

Met Lys Gln His Ile Gly Tyr Leu Gly Met Gly Ile Trp Gly Phe Cys
 1 5 10 15
 Leu Ala Ser Leu Leu Ala Asn Lys Gly Tyr Pro Val Val Ala Trp Ser
 20 25 30
 Arg Asn Pro Asp Leu Ile Lys Gln Leu Gln Glu Arg Arg His Pro
 35 40 45
 Leu Ala Pro Asn Val Val Ile Ser Pro Asn Leu Ser Phe Thr Thr Asp
 50 55 60
 Met Lys Glu Ala Ile His Asn Ala Phe Met Ile Val Glu Gly Val Thr
 65 70 75 80
 Ser Ala Gly Ile Arg Pro Val Ala Glu Gln Leu Lys Gln Ile Thr Asp
 85 90 95
 Leu Ser Val Pro Phe Val Ile Thr Ser Lys Gly Ile Glu Gln Asn Thr
 100 105 110
 Gly Leu Leu Ser Glu Ile Met Leu Glu Val Leu Gly Asp Ser Val
 115 120 125
 Thr Pro Tyr Leu Gly Tyr Leu Ser Gly Pro Ser Ile Ala Lys Glu Val
 130 135 140
 Leu Asn Gly Ser Pro Cys Ser Val Val Val Ser Ala Tyr Asp Ser Gln
 145 150 155 160
 Thr Leu Lys Gln Ile His Glu Ala Phe Ser Leu Pro Thr Phe Arg Val
 165 170 175
 Tyr Pro Asn Thr Asp Ile Lys Gly Ala Ala Leu Gly Gly Ala Leu Lys

180 185 190
 Asn Val Ile Ala Ile Ala Cys Gly Ile Ala Glu Gly Leu Ser Phe Gly
 195 200 205
 Asn Asn Ala Lys Ala Gly Leu Val Thr Arg Gly Leu His Glu Met Arg
 210 215 220
 Lys Leu Ala Ala Ile Met Asp Cys Lys Pro Glu Thr Leu Asn Gly Leu
 225 230 235 240
 Ala Gly Leu Gly Asp Leu Cys Val Thr Cys Phe Ser Glu Ser Ser Arg
 245 250 255
 Asn Leu Arg Phe Gly His Leu Leu Ala Gln Gly Leu Thr Phe Glu Gln
 260 265 270
 Ala Lys Ala Lys Ile Gly Met Val Val Glu Gly Ala Tyr Thr Ala Leu
 275 280 285
 Ser Ala Tyr Gln Val Ala Lys His His Lys Ile Asp Met Pro Ile Thr
 290 295 300
 Thr Gly Ile Tyr Arg Val Leu Tyr Glu Asn Leu Asp Leu Lys Glu Gly
 305 310 315 320
 Ile Ala Leu Leu Leu Gln Arg Asn Thr Lys Glu Glu Phe Leu
 325 330

<210>924

<211>461

<212>PRT

<213>Chlamydia pneumoniae

<400>924

Met Thr Glu Ser Val Tyr Ser Pro Ser Ala Met His Val Asn Ser Leu
 1 5 10 15
 Ala Asp Lys Leu Lys Ala Ile Asn Gln Glu His Ile Leu Asp Ile Trp
 20 25 30
 Pro Ser Leu Ser Pro Lys Gln Gln Arg Leu Phe Gln Gln Leu Thr
 35 40 45
 Ser Val Asp Ile Asp Phe Phe Arg Lys Gln Gln Gln Leu Leu Ser Ser
 50 55 60
 Pro Thr Ala Ile Leu Lys Asp Phe His Pro Ile Thr Ser Phe Ala Ser
 65 70 75 80
 Ser Gly Glu Asp Pro Glu Arg Ala His Ala Gly Thr Thr Leu Leu Lys
 85 90 95
 Glu Lys Lys Val Ala Cys Val Val Leu Ala Gly Gly Gln Gly Ser Arg
 100 105 110
 Leu Lys Cys Asp Gly Pro Lys Gly Leu Phe Pro Val Ser Pro Ile Lys
 115 120 125
 Lys Lys Pro Leu Phe Gln Leu Val Ala Glu Lys Val Arg Ala Ala Ser
 130 135 140
 Lys Leu Ala Gly Gln Pro Leu Pro Leu Ala Phe Met Thr Ser Pro Leu
 145 150 155 160
 Asn Thr Arg Gln Thr Arg Ser Phe Phe Glu Ser Asn Asp Tyr Phe His
 165 170 175
 Leu Asp Pro Asn Gln Val Asp Phe Phe Cys Gln Pro Leu Trp Pro Leu
 180 185 190
 Leu Thr Leu Ser Gly Asp Leu Phe Leu Glu Asp Met Asp Thr Leu Ala
 195 200 205
 Leu Gly Pro Asn Gly Asn Gly Cys Ile Ala Thr Leu Leu Tyr Thr Ser
 210 215 220
 Gly Val Trp Glu Lys Trp Lys Asn Ala Gly Ile Glu Met Val Ser Val
 225 230 235 240
 Ile Pro Ile Asp Asn Pro Leu Ala Leu Pro Phe Asp Val Glu Leu Cys
 245 250 255
 Gly Phe His Ala Met Ser Asn Asn Glu Val Thr Ile Lys Ala Ala Leu
 260 265 270
 Arg Gln Thr Ala Ile Glu Asp Val Gly Ile Leu Val Lys Ser His Asp
 275 280 285
 Ser Gly Lys Thr Ser Val Ile Glu Tyr Ser Glu Ile Pro Gln Asn Glu
 290 295 300
 Arg Phe Ala Leu Asn Glu Asp Gly Lys Leu Lys Tyr Cys Leu Ala Asn
 305 310 315 320

PCT/LB98/01890

Ile	Gly	Leu	Tyr	Cys	Leu	Ser	Met	Asp	Phe	Ile	Arg	His	Ala	Ala	Tyr
				325					330					335	
Gln	Gln	Leu	Pro	Leu	Tyr	Lys	Val	His	Lys	His	Ala	Lys	Gln	Leu	Gly
			340					345					350		
His	Thr	Ser	Leu	Asn	Glu	Lys	Asn	Ala	Trp	Lys	Phe	Glu	Glu	Phe	Ile
		355					360					365			
Phe	Asp	Leu	Phe	Cys	Tyr	Ser	Asp	His	Cys	Gln	Thr	Leu	Val	Tyr	Pro
	370					375				380					
Arg	Gln	Glu	Cys	Phe	Ala	Pro	Leu	Lys	Asn	Leu	Glu	Gly	Asn	His	Ser
385					390					395					400
Pro	Asp	Thr	Val	Arg	Gln	Ala	Leu	Ser	Asp	Arg	Glu	Arg	Gln	Leu	Phe
			405						410					415	
His	Lys	Val	Thr	Gly	Lys	Lys	Leu	Ser	Pro	Asn	Thr	Thr	Phe	Glu	Leu
		420						425					430		
Glu	Ala	Asp	Phe	Tyr	Tyr	Pro	Ser	Thr	Ser	Thr	Ser	Leu	His	Trp	Glu
		435					440					445			
Asn	Lys	Ala	Phe	Phe	Glu	Glu	Pro	Phe	Phe	Glu	Ala	Ser			
	450					455						460			
<210>925															
<211>433															
<212>PRT															
<213>Chlamydia pneumoniae															
<400>925															
Met	Asn	His	Leu	Asn	Lys	Glu	Lys	Leu	His	Ile	His	Asn	Trp	Gln	Pro
1				5					10					15	
Tyr	Arg	Ala	Cys	Gly	Leu	Leu	Ser	Lys	Val	Ser	Gly	Asn	Leu	Ile	Glu
			20					25					30		
Val	Asp	Gly	Leu	Ser	Ala	Cys	Leu	Gly	Glu	Leu	Cys	Lys	Ile	Ser	Ser
		35					40					45			
Thr	Lys	Asp	Pro	Asn	Leu	Leu	Ala	Glu	Val	Ile	Gly	Phe	His	Asn	His
	50					55					60				
Thr	Thr	Leu	Leu	Met	Ser	Leu	Ser	Pro	Leu	His	Ser	Val	Ala	Leu	Gly
65				70						75					80
Thr	Glu	Val	Leu	Pro	Arg	Arg	Pro	Pro	Ser	Leu	His	Leu	Ser	Asp	
			85					90					95		
His	Leu	Leu	Gly	Arg	Val	Leu	Asp	Ala	Phe	Gly	Asn	Pro	Ile	Asp	Lys
			100					105					110		
Lys	Glu	Asp	Leu	Pro	Lys	Thr	His	Arg	Lys	Pro	Leu	Leu	Ser	Leu	Pro
		115					120					125			
Pro	Ser	Pro	Met	Met	Arg	Gln	Pro	Ile	Asp	Gln	Ile	Phe	Pro	Thr	Gly
	130					135					140				
Ile	Lys	Ala	Ile	Asp	Al										

325 330 335
 Lys Ala Leu Ala Ser Pro Pro Ile Asp Ile Leu Ser Ser Leu Ser Arg
 340 345 350
 Ser Ala Gln Ala Leu Ala Leu Pro His His Tyr Ala Ala Ala Glu Arg
 355 360 365
 Leu Arg Ser Leu Leu Lys Val Tyr Asn Glu Ala Leu Asp Ile Ile His
 370 375 380
 Leu Gly Ala Tyr Thr Pro Gly Gln Asp Glu Glu Leu Asp Lys Ala Val
 385 390 395 400
 Lys Leu Leu Pro Ser Ile Lys Ala Phe Leu Ala Gln Pro Leu Ser Ser
 405 410 415
 Tyr Cys Tyr Leu Asp Asn Thr Leu Lys Gln Leu Glu Ala Leu Ala Asp
 420 425 430
 Ser

<210>926

<211>91

<212>PRT

<213>Chlamydia pneumoniae

<400>926

Met Ile His Ala Val Lys Thr Glu Ser Arg Trp Ser Ser Ser Ser Leu
 1 5 10 15
 Ile Ser Cys Leu Arg Ile Pro Leu Gly Val Ser Ile Leu Asn Pro Asp
 20 25 30
 Arg Leu Gln Glu Val Ser Gly Lys Asn Ser Ala Cys Leu Ile Met Gly
 35 40 45
 Ser Ser Trp Val Glu Ile Gln Ser Val Ser Val Leu Arg Ser Ser Gly
 50 55 60
 Trp Arg Asn Thr Leu Met Gly Val Arg Asp Leu Asn Val Val Cys Leu
 65 70 75 80
 Trp Ser Ala Val Glu Arg Ser Arg Ala Ser Ser
 85 90

<210>927

<211>266

<212>PRT

<213>Chlamydia pneumoniae

<400>927

Met Thr Leu Pro Leu Glu Pro Met Ile Phe Trp Ser Ser Leu Ser Ala
 1 5 10 15
 Lys Val Met Lys Lys Phe Leu Thr Pro His Cys Ala Gly Thr Phe Ser
 20 25 30
 Glu Glu Asp Ala Glu Ala Lys Glu Ala His Leu Val Thr Gly Lys Gln
 35 40 45
 Gly His Arg Leu Met Gly Asn Cys Val Thr Phe Tyr Trp Leu Val Asp
 50 55 60
 Lys Lys Asn Gly Val Ile Leu Asp Ala Lys Phe Gln Tyr Phe Gly His
 65 70 75 80
 Pro Tyr Leu Ile Pro Leu Ala Glu Ala Val Cys Asn Leu Val Cys Gly
 85 90 95
 Lys Ser Tyr Ser Glu Ala Tyr Lys Met Thr Leu Asp Asp Ile Asp Lys
 100 105 110
 Ser Leu Arg Val His Ala His Gln Pro Ala Leu Pro Glu Asp Ser Ile
 115 120 125
 Ser Leu Tyr His Phe Val Ile Asp Ala Leu Asp Thr Ala Val Glu Gln
 130 135 140
 Cys Leu Glu Ile Pro Leu Glu Asp Gly Ser Leu Pro Leu Gln Asn Ser
 145 150 155 160
 Pro Met Asn Leu Asp Phe Glu Asp Ala Asn Pro Tyr Ser Gln Ser Asp
 165 170 175
 Trp Glu Ala Leu Thr His Glu Gln Lys Leu Tyr Ala Leu Arg Ala Thr
 180 185 190
 Ile Ala Glu Lys Ile Gly Pro Tyr Ile Ala Met Asp Gly Gly Glu Val
 195 200 205
 Thr Val Glu Ser Leu Glu Asn Phe Ile Val Thr Ile Ala Tyr Ser Gly


```

      210      215      220
Asn Cys Ser Gly Cys Pro Ser Ser Leu Gly Ser Thr Leu Asn Ser Ile
225      230      235      240
Gly Gln Leu Leu Arg Ala Tyr Ile Tyr Pro Glu Leu Gln Val Lys Val
      245      250      255
Asp Glu Ser Ser Leu Asn Leu Ser His Pro
      260      265

<210>928
<211>401
<212>PRT
<213>Chlamydia pneumoniae
<400>928
Gly Arg Gly Thr Ile Phe Arg Ile Thr Asp Gly Lys Thr Ser Cys Ile
  1      5      10      15
Ser Met Glu Lys Pro Gln Asn Arg Lys Ala Pro Arg Ile Phe Trp Leu
      20      25      30
Asn Asn Gln Val Ala Ile Pro Pro Ser Glu Arg Val Lys Glu Ser Tyr
      35      40      45
Ala Leu His Ser Asp Ile Phe Ser Leu Pro Pro Gly Ser Ala Leu Lys
      50      55      60
Leu Ala Glu Lys Thr Glu Ser Ile Arg Gln Leu Val Gly Leu Lys
      65      70      75      80
Asp Ser His Ile Phe Arg Phe Val Pro His Phe Pro His Val Val His
      85      90      95
Ile Val Leu Ala Ala Leu Val Glu Asn Leu Ser Met Phe Gln Gly Arg
      100      105      110
Asn His Ile Ile Leu Pro Ala His Asp Gln Gln Leu Leu Ile Asn Ser
      115      120      125
Leu Cys Arg His Gln Gly Leu Gly Thr Thr Tyr Asp Trp Val Thr Val
      130      135      140
Asn His Glu Gly Arg Ile Val Glu Glu Gln Leu Ile Glu Thr Leu Ser
      145      150      155      160
Pro Arg Ser Leu Leu Phe Ser Leu Ser Ala Ala His Gly Leu Thr Gly
      165      170      175
Val Ile Gln Pro Leu Asp Pro Leu Leu Ser Leu Cys Lys Asp Arg Arg
      180      185      190
Ile Leu Leu His Leu Asp Ile Ser Asp Ile Leu Gly Arg Ala Pro Leu
      195      200      205
Thr Pro Glu Ile Leu Asn Ala Asp Ile Ile Thr Phe Ser Ser Ala Ala
      210      215      220
Leu Gly Gly Met Gly Ser Ile Gly Gly Ile Phe Ile Arg Lys Ser Leu
      225      230      235      240
Glu Arg Val Phe Ser Ser Trp Phe Pro Pro His Thr Ser Ala Ser Leu
      245      250      255
Cys Phe Ser Ala Val Ala Ala Met Gln Thr Ala Cys Glu Glu Arg Ile
      260      265      270
Ser Ala Leu Pro Leu Phe Thr Phe His Thr Ser Asn Leu Cys Lys Lys
      275      280      285
Leu Ile Gln Glu Leu Gln Ser Val Leu Pro Ser Ile Gln Leu Ala Phe
      290      295      300
Ser Glu Val Gln Asn Arg Leu Pro Asn Ile Val Val Ala Ala Ile Pro
      305      310      315      320
Asp Ile Pro Ala Glu Ser Leu Ala Phe His Leu His Gln Gln Gly Ile
      325      330      335
Tyr Pro Ser Leu Gly Tyr Glu Arg Phe Gln Pro Leu Ala Gln Val Leu
      340      345      350
Gln Asn Cys Gly Ile Ser Pro Phe Leu Cys His Ser Ala Leu His Phe
      355      360      365
Ser Leu Thr Glu Arg Ser Lys Asp Leu Glu Phe Ser Lys Leu Ala Arg
      370      375      380
Ala Met His Asp Ala Ile Lys His Leu Thr Pro Leu Leu Gly Ser Ser
      385      390      395      400
Ser

```

<210>929

<211>228

<212>PRT

<213>Chlamydia pneumoniae

<400>929

Met Ala Leu Leu Ile Leu Leu Arg His Gly Gln Ser Val Trp Asn Glu
 1 5 10 15
 Lys Asn Leu Phe Ser Gly Trp Val Asp Ile Pro Leu Ser Gln Gln Gly
 20 25 30
 Ile Glu Glu Ala Phe Ser Ala Gly Arg Ala Ile Gln Asn Leu Pro Ile
 35 40 45
 Asp Cys Ile Phe Thr Ser Thr Leu Val Arg Ser Leu Met Thr Ala Leu
 50 55 60
 Leu Ala Met Thr Asn His Ser Lys Lys Ile Pro Tyr Ile Val His
 65 70 75 80
 Glu Asp Pro Lys Ala Lys Glu Met Ser Arg Ile Tyr Ser Ala Glu Glu
 85 90 95
 Glu Asn Asn Met Ile Pro Leu Tyr Gln Ser Ser Ala Leu Asn Glu Arg
 100 105 110
 Met Tyr Gly Glu Leu Gln Gly Lys Asn Lys Lys Gln Thr Ala Glu Gln
 115 120 125
 Phe Gly Glu Glu Arg Val Lys Leu Trp Arg Arg Ser Tyr Lys Thr Ala
 130 135 140
 Pro Pro Gln Gly Glu Ser Leu Tyr Asp Thr Lys Gln Arg Thr Leu Pro
 145 150 155 160
 Tyr Phe Glu Lys Asn Ile Leu Pro Gln Leu Gln Asn Gly Lys Asn Val
 165 170 175
 Phe Val Ser Ala His Gly Asn Ser Leu Arg Ser Leu Ile Met Asp Leu
 180 185 190
 Glu Lys Leu Ser Glu Glu Glu Val Leu Ser Leu Glu Leu Pro Thr Gly
 195 200 205
 Lys Pro Val Val Tyr Gln Trp Lys Asn His Lys Ile Glu Lys His Pro
 210 215 220
 Glu Phe Phe Gly

225

<210>930

<211>235

<212>PRT

<213>Chlamydia pneumoniae

<400>930

Val Thr Lys Val Arg Leu Asn Lys Phe Leu Ala Ser Ala Gly Val Ala
 1 5 10 15
 Ser Arg Arg Lys Cys Asp Glu Ile Ile Phe Ser Gly Ser Val Thr Val
 20 25 30
 Asn Gly Arg Val Ala Glu Gly Pro Phe Val Leu Val Asp Pro Glu Asp
 35 40 45
 Lys Val Gln Val Gly Gly Thr Ser Val His Leu Thr Lys Lys Val Tyr
 50 55 60
 Phe Met Val His Lys Ala Ile Gly Tyr Leu Cys Ser Ser Glu Lys Lys
 65 70 75 80
 Phe Pro Gly Thr Lys Leu Val Ile Asp Leu Phe Ala His Leu Pro Tyr
 85 90 95
 Arg Val Phe Thr Val Gly Arg Leu Asp Lys Glu Thr Ser Gly Leu Ile
 100 105 110
 Leu Val Thr Asn Asp Gly Glu Phe Ala Asn Lys Ile Ile His Pro Ser
 115 120 125
 Ser Gly Ile Thr Lys Glu Tyr Leu Leu Lys Val Ser Arg Asp Val Ser
 130 135 140
 Ala Lys Asp Leu Gly Lys Leu Met Glu Gly Thr Phe Ile Asp Gly Lys
 145 150 155 160
 His Val Arg Pro Val Ser Val Thr Lys Ile Arg Arg Gly Thr Val Lys
 165 170 175
 Ile Val Val Ser Glu Gly Lys Lys His Glu Ile Arg Leu Phe Ala Asp
 180 185 190

Ala Ala Gly Leu Pro Ile Leu Glu Leu Lys Arg Ile Arg Ile Gly Ser
 195 200 205
 Leu Val Leu Gly Gly Leu Arg Tyr Gly Glu Tyr Arg Glu Leu Thr Asp
 210 215 220
 Ala Glu Leu Gly Thr Tyr Met Lys Leu Ser Asp
 225 230 235

<210>931

<211>193

<212>PRT

<213>Chlamydia pneumoniae

<400>931

Asn Met Lys Val Ile Tyr Tyr Glu Ile Glu Glu Ile Pro Ser Thr Asn
 1 5 10 15
 Thr Met Ala Lys Ser Tyr Met His Leu Trp Asp Pro Tyr Ala Leu Thr
 20 25 30
 Val Ile Ser Thr Lys Cys Gln Thr Ala Gly Thr Gly Lys Phe Gly Lys
 35 40 45
 Ser Trp Lys Ser Ser Lys Gly Asp Leu Leu Asn Thr Phe Cys Phe Phe
 50 55 60
 Ile Thr Asp Leu His Ile Asp Val Ser Arg Leu Phe Arg Leu Gly Thr
 65 70 75 80
 Glu Ala Val Val Ala Leu Cys Lys Asp Leu Gly Ile Thr Glu Ala Lys
 85 90 95
 Ile Lys Trp Pro Asn Asp Val Leu Val His Gly Glu Lys Leu Cys Gly
 100 105 110
 Val Leu Pro Glu Thr Leu Pro Val Glu Gly Leu Leu Gly Val Val Leu
 115 120 125
 Gly Ile Gly Leu Asn Gly Asn Thr Thr Lys Gln Ala Leu Lys Asp Val
 130 135 140
 Gly Gln Pro Ala Thr Ser Leu Gln Glu Ile Leu Gly His Pro Ile Asp
 145 150 155 160
 Leu Glu Thr Thr Arg Glu Leu Leu Ile His His Leu Leu Gly Val Leu
 165 170 175
 Gln Glu Asn Leu Pro Asp Ser Leu Ala Thr Lys Ser Asn Arg Gly Asn
 180 185 190
 Ile

<210>932

<211>421

<212>PRT

<213>Chlamydia pneumoniae

<400>932

Cys Ile Arg Ile Pro Gln Met His Ile Gly Phe Cys His Cys Val Arg
 1 5 10 15
 Gly Gly Asn Phe Phe Tyr Phe Val Ile Asn Asn Phe His Ile Leu Glu
 20 25 30
 Ile Tyr Ser Leu Leu Asn Ser Asn Thr Ile Met Arg Tyr His Lys Tyr
 35 40 45
 Phe Arg Tyr Val Asn Ser Trp Val Phe Leu Val Val Leu Thr Leu Met
 50 55 60
 Leu Leu Ser Val Val Val Ile Ser Ser Met Asp Pro Thr Ala Met Leu
 65 70 75 80
 Val Thr Ser Ser Lys Gly Leu Leu Thr Asn Lys Ser Ile Met Gln Leu
 85 90 95
 Arg His Phe Ala Leu Gly Trp Val Val Phe Phe Ile Cys Ala Tyr Phe
 100 105 110
 Asp Tyr His Leu Phe Lys Arg Trp Ala Trp Val Leu Tyr Phe Phe Met
 115 120 125
 Ile Cys Ala Leu Val Gly Leu Phe Phe Val Pro Ser Val Gln Asn Val
 130 135 140
 His Arg Trp Tyr Arg Ile Pro Phe Ile His Met Ser Val Gln Pro Ser
 145 150 155 160
 Glu Tyr Gly Lys Leu Val Ile Val Ile Met Leu Ser Tyr Ile Leu Glu
 165 170 175

Ser Arg Lys Ala Asp Ile Thr Ser Lys Thr Thr Ala Phe Leu Ala Cys
 180 185 190
 Leu Val Val Ala Leu Pro Phe Phe Leu Ile Leu Lys Glu Pro Asp Leu
 195 200 205
 Gly Thr Ala Leu Val Leu Cys Pro Val Thr Leu Thr Ile Phe Tyr Leu
 210 215 220
 Ser Asn Val His Ser Leu Val Lys Phe Cys Thr Val Val Ala Thr
 225 230 235 240
 Ile Gly Ile Ile Gly Ser Leu Leu Ile Phe Ser Gly Ile Val Ser His
 245 250 255
 Gln Lys Val Lys Pro Tyr Ala Leu Lys Val Ile Lys Glu Tyr Gln Tyr
 260 265 270
 Glu Arg Leu Ser Pro Ser Asn His His Gln Arg Ala Ser Leu Ile Ser
 275 280 285
 Ile Gly Leu Gly Gly Ile Arg Gly Arg Gly Trp Lys Thr Gly Glu Phe
 290 295 300
 Ala Gly Arg Gly Trp Leu Pro Tyr Gly Tyr Thr Asp Ser Val Phe Ser
 305 310 315 320
 Ala Leu Gly Glu Glu Phe Gly Leu Leu Gly Leu Leu Phe Thr Leu Gly
 325 330 335
 Leu Phe Tyr Cys Leu Ile Cys Phe Gly Cys Arg Thr Val Ala Val Ala
 340 345 350
 Thr Asp Asp Phe Gly Lys Leu Leu Ala Ala Gly Ile Thr Val Tyr Leu
 355 360 365
 Ala Met His Val Leu Ile Asn Ile Ser Met Met Cys Gly Leu Leu Pro
 370 375 380
 Ile Thr Gly Val Pro Leu Ile Leu Ile Ser Tyr Gly Gly Ser Ser Val
 385 390 395 400
 Ile Ser Thr Met Ala Ser Leu Gly Val Leu Gln Ser Ile Tyr Ser His
 405 410 415
 Arg Phe Ala Lys Tyr
 420

<210>933

<211>392

<212>PRT

<213>Chlamydia pneumoniae

<400>933

Ile Phe Phe Ser Ile Cys Ser Leu Tyr Phe Cys Asn Cys Leu Trp Asn
 1 5 10 15
 Cys Pro Phe Gly Ser Phe Ile Tyr Phe His Ser Ile Val Arg Thr Ser
 20 25 30
 Glu Cys Ile Leu Pro Cys Pro Ser Val Ser Tyr Cys Ser Val Ser Val
 35 40 45
 Cys Phe Asp His Cys Asp Ser Tyr Cys Leu Phe Lys Cys Tyr Gln Cys
 50 55 60
 Leu Cys Glu Thr Trp Gly Ser Xaa Glu Arg Arg Cys Val Leu Asp Arg
 65 70 75 80
 Leu Val Ser Cys Asn Ser Val Val Met Asp Lys Thr Gly Thr Leu Thr
 85 90 95
 Thr Gly Glu Leu Thr Cys Ile Gly Cys Asp Tyr Phe Gly Ser Lys Asn
 100 105 110
 Glu Thr Phe Phe Pro Ser Val Leu Ala Leu Glu Gln Ser Ser Ser His
 115 120 125
 Pro Ile Ala Glu Ala Ile Val Ser Tyr Leu Met Glu Gln Lys Val Ser
 130 135 140
 Ser Leu Pro Ala Asp Arg Tyr Leu Thr Val Pro Gly Glu Gly Val Arg
 145 150 155 160
 Gly Tyr Phe Asn Glu Gln Glu Ala Phe Val Gly Arg Val Glu Thr Gly
 165 170 175
 Leu Gly Lys Val Pro Ser Glu Tyr Leu Glu Asp Ile Glu Gln Lys Ile
 180 185 190
 Tyr Gln Ala Lys Gln His Gly Glu Ile Cys Ser Leu Ala Tyr Val Gly
 195 200 205
 Asn Ser Phe Ala Leu Phe Tyr Phe Arg Asp Ile Pro Arg Pro Gln Ala

210 215 220
 Lys Glu Ile Ile Gln Asp Leu Lys Asp Leu Gly Tyr Pro Val Ser Met
 225 230 235 240
 Leu Thr Gly Asp His Lys Val Ser Ala Glu Asn Thr Ala Glu Ile Leu
 245 250 255
 Gly Ile Ser Glu Val Phe Phe Asp Leu Thr Pro Glu Asp Lys Leu Ala
 260 265 270
 Lys Ile Arg Glu Leu Ala Thr Gln Arg Gln Ile Met Met Val Gly Asp
 275 280 285
 Gly Ile Asn Asp Ala Pro Ala Leu Ala Gln Ala Thr Val Gly Ile Ala
 290 295 300
 Met Gly Glu Ala Gly Ser Ala Thr Ala Ile Glu Ala Ala Asp Ile Val
 305 310 315 320
 Leu Leu His Asp Ser Leu Ser Ser Leu Pro Trp Ile Ile Gln Lys Ala
 325 330 335
 Lys Gln Thr Lys Lys Val Val Ser Gln Asn Leu Ala Leu Ala Leu Ala
 340 345 350
 Ile Ile Leu Leu Val Ser Trp Pro Ala Ser Leu Gly Ile Ile Pro Leu
 355 360 365
 Trp Leu Ala Val Ile Leu His Glu Gly Ser Thr Val Ile Val Gly Leu
 370 375 380
 Asn Ala Leu Arg Leu Leu Lys Ser
 385 390
 <210>934
 <211>373
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>934
 Asn Phe Arg Asn Gly Leu Gly Val Arg Asp Leu His His Phe Arg Glu
 1 5 10 15
 Tyr Tyr Leu Ile Ile Asn Glu Ile Ile Ile Thr Gly Arg Tyr Val Phe
 20 25 30
 Ser Arg Leu Phe Phe Thr Ser Phe Ser Ala Glu Val Val Asn Thr Phe
 35 40 45
 Phe Glu Ser Gly Met Ser Glu Asp Thr Ser Pro Leu Leu Ser Lys Gln
 50 55 60
 Asn Arg Lys Leu Ser His Asn Leu Pro Leu Lys Ser Ala Tyr Leu Ser
 65 70 75 80
 Leu Gly Thr Tyr Leu Ile Ala Leu Leu Ser Phe Trp Leu His Ala Lys
 85 90 95
 Asn Leu Ser Asn Leu Phe Val Val Phe Thr Phe Phe Leu Ala Gly Thr
 100 105 110
 Pro Ala Leu Ile Lys Ser Leu Val Asn Ile Cys Gln Lys Val Val Asn
 115 120 125
 Ile Asp Ile Leu Met Thr Ser Ala Pro Phe Gly Ser Ile Phe Ile Gly
 130 135 140
 Gly Ala Leu Glu Gly Ala Leu Leu Leu Val Leu Phe Ala Ile Ser Glu
 145 150 155 160
 Ala Leu Gly Gln Met Val Ser Gly Lys Ala Lys Ser Thr Leu Val Ser
 165 170 175
 Leu Lys Gln Leu Ala Pro Thr Thr Gly Trp Leu Val Leu Glu Asp Gly
 180 185 190
 Asn Leu Gln Lys Val Ala Ile Asn Lys Ile Glu Val Gly Asn Ile Leu
 195 200 205
 Arg Ile Lys Ser Gly Glu Val Val Pro Leu Asp Gly Glu Ile Leu His
 210 215 220
 Gly Ser Ser Ser Ile Asn Leu Met His Leu Thr Gly Glu Lys Val Pro
 225 230 235 240
 Lys Ser Cys His Pro Gly Ser Ile Val Pro Ala Gly Ala His Asn Met
 245 250 255
 Glu Gly Ser Phe Asp Leu Arg Val Leu Arg Thr Gly Ser Asp Ser Thr
 260 265 270
 Ile Ala His Ile Ile Asn Leu Val Ile Gln Ala Gln Asn Ser Lys Pro
 275 280 285

Arg Leu Gln Gln Arg Leu Asp Lys Tyr Ser Ser Val Tyr Ala Leu Ser
 290 295 300
 Ile Phe Ala Ile Ala Cys Gly Ile Ala Leu Leu Val Pro Leu Phe Thr
 305 310 315 320
 Ser Ile Pro Leu Leu Gly Pro Gln Ser Ala Phe Tyr Arg Ala Leu Ala
 325 330 335
 Phe Leu Ile Ala Ala Ser Pro Cys Ala Leu Ile Ile Ala Ile Pro Ile
 340 345 350
 Ala Tyr Leu Ser Ala Ile Asn Ala Cys Ala Lys His Gly Val Leu Xaa
 355 360 365
 Lys Gly Gly Val Phe
 370

<210>935

<211>274

<212>PRT

<213>Chlamydia pneumoniae

<400>935

Glu Gly Trp Arg Phe Phe Phe Pro Lys Thr Ser Glu Asn Thr Ser Asp
 1 5 10 15
 Cys Arg Gln His Gln Ile Leu Arg Lys Ile Met Thr Gln Asp Pro His
 20 25 30
 Asp His Phe Lys Ser Arg Thr Pro Glu Asp His Ile Lys His Val Arg
 35 40 45
 Asp Lys His Arg Val Cys Lys Gly Glu Pro His Thr Thr Phe Lys Gly
 50 55 60
 Phe Phe Tyr His Leu Ala Asn Asn Ala Leu Ser Thr Gly Val Phe Ile
 65 70 75 80
 Phe Phe Ile Arg Thr Leu Phe Phe Leu Ile Pro Thr Asn Arg Ala Leu
 85 90 95
 Gln Val Lys Ser Leu Ile Ser Leu Gly Val Gly Trp Thr Phe Tyr His
 100 105 110
 Gly Cys Leu Lys Ala Arg Lys Ala Trp Ala Tyr Met Glu Leu Ser His
 115 120 125
 Arg Ser Met Leu Glu Glu Lys Asn Glu Ile Glu Glu Asn Phe Glu Gln
 130 135 140
 Glu Lys Ile Glu Leu Arg Ile Leu Phe Glu Asn Gln Gly Phe Lys Asp
 145 150 155 160
 Pro Leu Leu Gln Glu Met Val Glu Tyr Val Cys Ser Asp Ser Thr Leu
 165 170 175
 Leu Leu Asp Thr Met Ile Arg Glu Glu Leu Tyr Ile Arg Lys Glu Asp
 180 185 190
 Leu Pro His Pro Leu Ile Gln Gly Gly Ser Arg Ile Leu Gly Gly Leu
 195 200 205
 Cys Gly Leu Ala Ile Phe Leu Pro Leu Val Leu Cys Ile Ser Tyr Thr
 210 215 220
 Leu Ala Gly Val Phe Ser Ala Leu Met Val Leu Val Leu Ser Phe Leu
 225 230 235 240
 Lys Ala Lys Ile Leu Lys Asn Asp Lys Ile Ser Glu Met Val Trp Val
 245 250 255
 Leu Gly Ile Phe Ile Thr Ser Ala Ser Ile Ile Ser Ser Leu Met Lys
 260 265 270
 Leu Leu

<210>936

<211>466

<212>PRT

<213>Chlamydia pneumoniae

<400>935

Val Ile Leu Pro Phe Ser Pro Ile Ser Ile Ala Arg Arg Ile Lys Lys
 1 5 10 15
 Ser Cys Cys Ser Glu Lys Ser Ser Ile Tyr Ser His Phe Cys Thr Leu
 20 25 30
 Leu Leu Asn Asn Glu Thr Ser Met Leu Asp Ile Lys Ile Ile Arg Lys
 35 40 45

Thr Pro Glu Glu Cys Glu Thr Arg Leu Arg Lys Lys Asp Pro Lys Ile
 50 55 60
 Ser Leu Glu Pro Val Leu Ser Leu Asp Lys Glu Val Arg Gln Leu Lys
 65 70 75 80
 Thr Asp Ser Glu Thr Leu Gln Ala Gln Arg Arg Leu Leu Ser Gln Asp
 85 90 95
 Ile His Lys Ala Lys Thr Gln Gly Val Asp Ala Thr Asn Leu Ile Gln
 100 105 110
 Glu Val Glu Thr Leu Ala Ala Asp Leu Glu Lys Ile Glu Gln His Leu
 115 120 125
 Asp Gln Lys Asn Ala Gln Leu His Glu Leu Leu Ser His Leu Pro Asn
 130 135 140
 Tyr Pro Ala Asp Asp Ile Pro Val Ser Glu Asp Lys Ala Gly Asn Gln
 145 150 155 160
 Val Ile Lys Ser Val Gly Asp Leu Pro Ile Phe Ser Phe Pro Pro Lys
 165 170 175
 His His Leu Glu Leu Asn Gln Glu Leu Asp Ile Leu Asp Phe Gln Ala
 180 185 190
 Ala Ala Lys Thr Thr Gly Ser Gly Trp Pro Ala Tyr Lys Asn Arg Gly
 195 200 205
 Val Leu Leu Glu Trp Ala Leu Leu Thr Tyr Met Leu Gln Lys Gln Ala
 210 215 220
 Ala His Gly Phe Gln Leu Trp Leu Pro Pro Leu Leu Val Lys Lys Glu
 225 230 235 240
 Ile Leu Phe Gly Ser Gly Gln Ile Pro Lys Phe Asp Gly Gln Tyr Tyr
 245 250 255
 Arg Val Glu Asp Gly Glu Gln Tyr Leu Tyr Leu Ile Pro Thr Ala Glu
 260 265 270
 Val Val Leu Asn Gly Phe Arg Ser Gln Asp Ile Leu Thr Glu Lys Glu
 275 280 285
 Leu Pro Leu Tyr Tyr Ala Ala Cys Thr Pro Cys Phe Arg Arg Glu Ala
 290 295 300
 Gly Ala Ala Gly Ala Gln Glu Arg Gly Leu Val Arg Val His Gln Phe
 305 310 315 320
 His Lys Val Glu Met Phe Ala Phe Thr Thr Pro Asn Gln Asp Asp Ile
 325 330 335
 Ala Tyr Glu Lys Met Leu Ser Ile Val Glu Glu Met Leu Thr Glu Leu
 340 345 350
 Lys Leu Pro Tyr Arg Leu Ser Leu Leu Ser Thr Gly Asp Met Ser Phe
 355 360 365
 Thr Xaa Ser Lys Thr Ile Asp Ala Glu Val Trp Leu Pro Gly Gln Lys
 370 375 380
 Ala Phe Tyr Glu Val Ser Ser Ile Ser Gln Cys Thr Asp Phe Gln Ser
 385 390 395 400
 Arg Arg Ser Gly Thr Arg Tyr Lys Asp Ser Gln Gly Lys Leu Gln Phe
 405 410 415
 Val His Thr Leu Asn Gly Ser Gly Leu Ala Thr Pro Arg Leu Leu Val
 420 425 430
 Ala Ile Leu Glu Asn Asn Gln Gln Ala Asp Gly Ser Val Ile Pro
 435 440 445
 Glu Val Leu Arg Pro Tyr Leu Gly Gly Leu Glu Ile Leu Leu Pro Lys
 450 455 460
 Asp Gln
 465
 <210>937
 <211>376
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>937
 Met Glu Asp Phe Ser Glu Gln Gln Leu Phe Phe Met Arg Arg Ala Ile
 1 5 10 15
 Glu Ile Gly Glu Lys Gly Arg Ile Thr Ala Pro Pro Asn Pro Trp Val
 20 25 30
 Gly Cys Val Val Val Gln Glu Asn Arg Ile Ile Gly Glu Gly Phe His

35 40 45
 Ala Tyr Ala Gly Gly Pro His Ala Glu Glu Leu Ala Ile Gln Asn Ala
 50 55 60
 Ser Met Pro Ile Ser Gly Ser Asp Val Tyr Val Ser Leu Glu Pro Cys
 65 70 75 80
 Ser His Phe Gly Ser Cys Pro Pro Cys Ala Asn Leu Leu Ile Lys His
 85 90 95
 Lys Val Ser Arg Val Phe Val Ala Leu Val Asp Pro Asp Pro Lys Val
 100 105 110
 Ala Gly Gln Gly Ile Ala Met Leu Arg Gln Ala Gly Ile Gln Val Tyr
 115 120 125
 Val Gly Ile Gly Glu Ser Glu Ala Gln Ala Ser Leu Gln Pro Tyr Leu
 130 135 140
 Tyr Gln Arg Thr His Asn Phe Pro Trp Thr Ile Leu Lys Ser Ala Ala
 145 150 155 160
 Ser Val Asp Gly Gln Val Ala Asp Ser Gln Gly Lys Ser Gln Trp Ile
 165 170 175
 Thr Cys Pro Glu Ala Arg His Asp Val Gly Lys Leu Arg Ala Glu Ser
 180 185 190
 Gln Ala Ile Leu Val Gly Ser Arg Thr Val Leu Ser Asp Asp Pro Trp
 195 200 205
 Leu Thr Ala Arg Gln Pro Gln Gly Met Leu Tyr Pro Lys Gln Pro Leu
 210 215 220
 Arg Val Val Leu Asp Ser Arg Gly Ser Val Pro Pro Thr Ser Lys Val
 225 230 235 240
 Phe Asp Lys Thr Ser Pro Thr Leu Tyr Val Thr Thr Glu Arg Cys Pro
 245 250 255
 Glu Asn Tyr Ile Lys Val Leu Asp Ser Leu Asp Val Pro Val Leu Leu
 260 265 270
 Thr Glu Ser Thr Pro Ser Gly Val Asp Leu His Lys Val Tyr Glu Tyr
 275 280 285
 Leu Ala Gln Lys Lys Ile Leu Gln Val Leu Val Glu Gly Gly Thr Thr
 290 295 300
 Leu His Thr Ser Leu Leu Lys Glu Arg Phe Val Asn Ser Leu Val Leu
 305 310 315 320
 Tyr Ser Gly Pro Met Ile Leu Gly Asp Gln Lys Arg Pro Leu Val Gly
 325 330 335
 Val Leu Gly Asn Leu Leu Glu Ser Ala Ser Pro Leu Thr Leu Lys Ser
 340 345 350
 Ser Gln Ile Leu Gly Asn Ser Leu Lys Val Val Trp Glu Ile Ser Pro
 355 360 365
 Gln Val Phe Glu Pro Ile Arg Asn
 370 375

<210>938

<211>418

<212>PRT

<213>Chlamydia pneumoniae

<400>938

Met Ile Glu Thr Arg Glu Glu Val Gly Ser Ala Asn Phe Val Ser Leu
 1 5 10 15
 Glu Arg Ala Ile Glu Asp Leu Arg Ala Gly Lys Phe Val Ile Val Val
 20 25 30
 Asp Glu Ala Ser Arg Glu Asp Glu Gly Asp Leu Ile Ile Ala Gly Glu
 35 40 45
 Lys Ile Thr Val Glu Lys Met Thr Phe Leu Leu Gln His Thr Thr Gly
 50 55 60
 Val Val Cys Ala Ala Leu Ser Gln Glu Arg Leu Leu Ser Leu Asp Leu
 65 70 75 80
 Pro Pro Met Val Lys Asp Asn Arg Cys Arg Phe Lys Thr Pro Phe Thr
 85 90 95
 Val Ser Val Asp Ala Ala His Gly Val Thr Thr Gly Val Ser Ala Ala
 100 105 110
 Asp Arg Thr Lys Val Val Gln Leu Leu Ala Asp Pro Lys Ser Lys Pro
 115 120 125

Glu Asp Phe Ile Ser Pro Gly His Phe Phe Pro Leu Ala Ser Ser Pro
 130 135 140
 Gly Gly Val Leu Lys Arg Ala Gly His Thr Glu Ser Thr Val Asp Leu
 145 150 155 160
 Met Glu Leu Ala Gly Leu Gln Pro Cys Gly Val Leu Ala Glu Leu Val
 165 170 175
 Asn Glu Asp Tyr Ser Met Met Arg Leu Pro Gln Ile Leu Glu Phe Ala
 180 185 190
 Arg Lys His Asn Ile Ala Val Ile Pro Val Thr Ser Ile Ile Ala His
 195 200 205
 Arg Met Leu Ser Asp Arg Leu Val Ser Lys Ile Ser Ser Ala Arg Leu
 210 215 220
 Pro Thr Ile Tyr Gly Asp Phe Thr Ile His Val Tyr Glu Ser Leu Leu
 225 230 235 240
 Glu Gly Met Gln His Leu Ala Leu Val Lys Gly Asn Val Ala Gly Lys
 245 250 255
 Ser Asn Val Leu Val Arg Val His Ser Glu Cys Val Thr Gly Asp Ile
 260 265 270
 Leu Gly Ser Lys Arg Cys Asp Cys Gly Glu Gln Leu Ser Ser Ala Met
 275 280 285
 Ser Tyr Ile Ala Glu Lys Gly Thr Gly Val Leu Val Tyr Leu Arg Gly
 290 295 300
 Gln Glu Gly Arg Gly Ile Gly Leu Gly His Lys Val Arg Ala Tyr Ala
 305 310 315 320
 Leu Gln Asp Asn Gly Tyr Asp Thr Val Asp Ala Asn Leu Ala Met Gly
 325 330 335
 Phe Pro Val Asp Ser Arg Glu Tyr Gly Ile Gly Ala Gln Ile Xaa Ile
 340 345 350
 Asp Leu Xaa Leu Thr Thr Ile Lys Leu Ile Thr His Asn Pro Gln Lys
 355 360 365
 Tyr Phe Gly Leu Gln Gly Phe Gly Leu Ser Ile Thr Glu Arg Val Pro
 370 375 380
 Leu Pro Val Arg Ile Ser Glu Asp Asn Glu Gln Tyr Leu Arg Thr Lys
 385 390 395 400
 Gln Glu Arg Met Gly His Trp Leu Asp Leu Pro Cys Cys Asn Asn Arg
 405 410 415
 Val Gln

<210>939

<211>154

<212>PRT

<213>Chlamydia pneumoniae

<400>939

Met Lys Thr Leu Lys Gly His Leu Ser Ala Lys Asn Leu Arg Ile Ala
 1 5 10 15
 Ile Val Gly Ser Cys Phe Asn Gln Ala Met Ala Asp Ala Leu Val Ser
 20 25 30
 Gly Thr Gln Glu Thr Phe Leu Lys Phe Gly Gly Ser Glu Asp Gly Leu
 35 40 45
 Met Thr Ile Arg Val Pro Gly Ala Phe Glu Ile Pro Cys Thr Ile Lys
 50 55 60
 Lys Leu Leu Ser Ser Glu Arg Lys Phe Asp Ala Ile Val Ala Cys Gly
 65 70 75 80
 Val Leu Ile Gln Gly Glu Thr Asp His Tyr Asn Gln Ile Val Asn Gln
 85 90 95
 Val Ala Ala Gly Ile Gly Ala Leu Ser Leu Glu Phe Cys Leu Pro Ile
 100 105 110
 Thr Leu Ser Ile Val Ala Ala Pro Ser Ala Glu Ile Ala Trp Gln Arg
 115 120 125
 Ser Gly Ile Lys Gly Arg His Leu Gly Val Ser Gly Met Thr Thr Ala
 130 135 140
 Ile Glu Met Ala Thr Leu Phe Thr Gln Ile
 145 150
 <210>940

<211>472

<212>PRT

<213>Chlamydia pneumoniae

<400>940

Leu Ile Ser Leu Asn Leu Lys Ile Leu Thr Lys Gln Arg Asp Arg Glu
 1 5 10 15
 Glu Ala Ser Met Leu Lys Ile Leu Lys Ile Lys Val Leu Val Phe Pro
 20 25 30
 Leu Ala Leu Leu Met Gly Cys Asn Ser Ile Gly Tyr Ala Gly Pro Gln
 35 40 45
 Gly Ser Leu Gln Thr Asn Ser Gln Thr Lys Val Lys Ile Gly Ser Glu
 50 55 60
 Val Trp Ile Glu Gln Lys Leu Arg Gln Tyr Pro Glu Leu Leu Trp Leu
 65 70 75 80
 Thr Glu Ser Gly Gly Ala Pro Leu Leu Thr Ser Thr Pro Ile Asp Met
 85 90 95
 Ala Tyr Ser Glu Lys Leu Phe Asn Lys Lys Val Pro Ala Leu Asp Ile
 100 105 110
 Ala Ile Arg Ser Met Ile His Leu His Leu Leu Ile Gln Gly Ser Arg
 115 120 125
 Gln Ser Tyr Met Gln Leu Ser Gln Ile Leu Pro Ser Glu Glu Gly Gly
 130 135 140
 Met Thr Phe Lys Gln Phe Gln Thr Ala His Lys Gln Leu Leu Phe Phe
 145 150 155 160
 Leu Asn Ser Pro Lys Ser Phe Asp Asn Thr Leu Arg Ile Leu Glu Thr
 165 170 175
 Ala Ile Val Leu Arg His Val Gly Cys Ser Ala Lys Ala Val Thr Thr
 180 185 190
 Phe Lys Pro Tyr Phe Thr Asp Ser Cys Pro Gln Ser Phe Tyr Ala Lys
 195 200 205
 Ala Leu His Val Leu Arg Thr Phe Pro Glu Leu Cys Pro Ser Tyr Ala
 210 215 220
 Arg Leu Ser Pro Glu Gln Gln Glu Val Leu Leu Ser Leu Arg Arg Leu
 225 230 235 240
 Gly Asn Tyr Asp Ser Leu Leu Asn Leu Thr Glu Val Pro Ser Ala Gln
 245 250 255
 Leu Leu Ser Ala Trp Arg Thr Arg Arg Ser Leu Ala Ile Leu Asp Leu
 260 265 270
 Tyr Leu Tyr Cys Leu Asp Thr Cys Gly Asp Lys Asn Cys Ser Gln Glu
 275 280 285
 Phe Tyr Ile Asn Phe Ala Pro Leu Leu Ser Met Leu Gln Gln His Ala
 290 295 300
 Thr Ile Glu Glu Ala Phe Ser Arg Tyr Phe Thr Tyr Arg Ala Asn Arg
 305 310 315 320
 Leu Gly Phe Glu Gly Thr Ser Arg Thr Asp Met Thr Leu Val Arg Leu
 325 330 335
 Ala Thr Leu Met Asn Leu Ser Pro Ser Glu Ala Ser Thr Leu Ala Trp
 340 345 350
 Ser Phe Lys Asn Leu Pro Ser Asp Glu Ala Glu Asn Leu Val Asn Ser
 355 360 365
 Phe Tyr Thr Val Gln Gly Glu His Ile Pro Leu Thr Phe Arg Gly Leu
 370 375 380
 Pro Ser Leu Val Ala Gly Leu Ser Val Ala Thr His Gly Ser Thr Val
 385 390 395 400
 Ser Pro Glu Asn Arg Leu Arg Gln Leu Tyr Ser Thr Met Leu Ser Leu
 405 410 415
 Leu Val Lys Ser Leu Arg Ser His Arg Glu Met Leu Asn Lys Gln Leu
 420 425 430
 Leu Pro Gln Gly Thr Val Leu Asp Phe Ser Glu Thr Thr Leu Ser Ser
 435 440 445
 Gly Gly Leu Asp Val Phe Ala Glu Ser Ile Ala Val Arg Ile His Leu
 450 455 460
 Asn Gly Ala Val Ser Ile Asn Leu
 465 470

<210>941

<211>220

<212>PRT

<213>Chlamydia pneumoniae

<400>941

```

Leu Lys Ile Met Lys Arg Val Ile Tyr Lys Thr Ile Phe Cys Gly Leu
 1           5           10           15
Thr Leu Leu Thr Ser Leu Ser Ser Cys Ser Leu Asp Pro Lys Gly Tyr
          20           25           30
Asn Leu Glu Thr Lys Asn Ser Arg Asp Leu Asn Gln Glu Ser Val Ile
          35           40           45
Leu Lys Glu Asn Arg Glu Thr Pro Ser Leu Val Lys Arg Leu Ser Arg
          50           55           60
Arg Ser Arg Arg Leu Phe Ala Arg Arg Asp Gln Thr Gln Lys Asp Thr
          65           70           75           80
Leu Gln Val Gln Ala Asn Phe Lys Thr Tyr Ala Glu Lys Ile Ser Glu
          85           90           95
Gln Asp Glu Arg Asp Leu Ser Phe Val Val Ser Ser Ala Ala Glu Lys
          100          105          110
Ser Ser Ile Ser Leu Ala Leu Ser Gln Gly Glu Ile Lys Asp Ala Leu
          115          120          125
Tyr Arg Ile Arg Glu Val His Pro Leu Ala Leu Ile Glu Ala Leu Ala
          130          135          140
Glu Asn Pro Ala Leu Ile Glu Gly Met Lys Lys Met Gln Gly Arg Asp
          145          150          155          160
Trp Ile Trp Asn Leu Phe Leu Thr Gln Leu Ser Glu Val Phe Ser Gln
          165          170          175
Ala Trp Ser Gln Gly Val Ile Ser Glu Glu Asp Ile Ala Ala Phe Ala
          180          185          190
Ser Thr Leu Gly Leu Asp Ser Gly Thr Val Ala Ser Ile Val Gln Gly
          195          200          205
Glu Arg Trp Pro Glu Leu Val Asp Ile Val Ile Thr
          210          215          220

```

<210>942

<211>385

<212>PRT

<213>Chlamydia pneumoniae

<400>942

```

Gln Glu Ile Leu Ala Arg Glu Ile Ser Pro Glu Cys Cys Arg Leu Ser
 1           5           10           15
Leu Trp Arg Ser Arg Arg Pro Gly Leu Gly Leu Leu Ala Ala Leu Leu
          20           25           30
Gly Ala Ile Val Gln Tyr Ala Gly Ser Tyr Leu Gly Ser Lys Tyr Arg
          35           40           45
Lys Pro Glu Gly Asn Thr Gly Glu Phe Ile Gly Gly Pro Ile Ala Cys
          50           55           60
Leu Ala Phe Gly Met Arg Lys Lys Ile Leu Ala Gly Phe Phe Ala Leu
          65           70           75           80
Phe Thr Ile Met Thr Ala Phe Cys Ala Gly Asn Cys Val Gln Val Ser
          85           90           95
Cys Ile Val Pro Leu Cys Ala Glu Gly Thr Pro Gly Lys Leu Leu Val
          100          105          110
Gly Ile Leu Leu Ala Leu Val Val Ile Pro Val Leu Ala Gly Gly Asn
          115          120          125
Asn Arg Ile Leu Arg Phe Ser Ala Arg Val Ile Pro Phe Ile Ala Gly
          130          135          140
Phe Tyr Cys Ile Ser Cys Gly Ile Ile Leu Phe Gln His Ala Ser Ala
          145          150          155          160
Ile Leu Pro Ala Ile Lys Leu Ile Cys Ser Ser Ala Phe Gly Ile Lys
          165          170          175
Ala Gly Leu Ala Gly Ile Gly Gly Tyr Thr Leu Ser Gln Val Ile Ser
          180          185          190
Thr Gly Ile Asn Arg Ala Val Met Ala Thr Asp Cys Gly Ser Gly Met
          195          200          205

```

WO 99/27105

PCT/IB98/01890

Val Ser Ile Leu Gln Ala Asn Thr Lys Ser Lys Asn Pro Val Val Asp
210 215 220
Gly Leu Val Thr Leu Val Pro Pro Val Ile Val Met Val Val Cys Ser
225 230 235 240
Ile Thr Met Leu Val Leu Ile Val Ser Gly Ala Tyr Ser Ser Gly Ala
245 250 255
Gln Gly Thr Leu Met Val Met Ser Ala Phe Lys Asn Ser Leu Gly Ser
260 265 270
Leu Gly Ser Val Ile Val Ile Leu Ala Met Ala Leu Phe Gly Tyr Thr
275 280 285
Thr Ile Leu Thr Trp Phe Ala Cys Ala Glu Lys Ser Leu Gln Tyr Met
290 295 300
Ile Pro Gly Arg Arg Ala Asn Leu Trp Leu Lys Ala Ile Tyr Val Leu
305 310 315 320
Ile Ile Pro Leu Gly Gly Val Ile Asp Met Arg Met Ile Trp Ala Leu
325 330 335
Ser Asp Thr Gly Phe Ser Gly Met Val Ile Leu Asn Cys Ile Ala Leu
340 345 350
Ile Ala Leu Leu Lys Asp Val Leu Ser Thr Asn Arg Asp Val Ala Leu
355 360 365
Leu Lys Glu Arg Glu Cys Ser Val Ala Asp Pro Val Arg Asn Leu Asp
370 375 380

Ala

385

<210>943

<211>110

<212>PRT

<213>Chlamydia pneumoniae

<400>943

Arg Arg Arg Ile Met Gln Leu Leu Ser Pro Ala Phe Ala Tyr Gly Ala
1 5 10 15
Pro Ile Pro Lys Lys Tyr Thr Cys Gln Gly Ala Gly Ile Ser Pro Pro
20 25 30
Leu Thr Phe Val Asp Val Pro Gly Ala Ala Gln Ser Leu Ala Leu Ile
35 40 45
Val Glu Asp Pro Asp Val Pro Lys Glu Ile Arg Ser Asp Gly Leu Trp
50 55 60
Ile His Trp Ile Val Tyr Asn Leu Ser Thr Thr Ile Thr Asn Leu Ala
65 70 75 80
Glu Gly Ala Glu Ile Phe Ala Val Gln Gly Leu Asn Thr Ser Gly Lys
85 90 95
Pro Val Tyr Glu Gly Pro Cys Pro Pro Asp Lys Gln His Arg
100 105 110

<210>944

<211>223

<212>PRT

<213>Chlamydia pneumoniae

<400>944

Gly Cys Met Ser Thr Val Thr Thr Glu Pro Cys Ser Ser Ile His Ile
1 5 10 15
Ser Leu Asn Asn Asp Trp Arg Asp Ser Gln Pro Tyr Ser Leu Asp Arg
20 25 30
Ala Ser Glu Leu Leu His Phe Arg Phe Leu Pro Ser Leu Val Phe Ser
35 40 45
Asn Trp Lys Val Glu Gln Gln Ile Glu Thr Leu Cys His Lys Ser Glu
50 55 60
Lys Arg Arg Leu Ile Ser Pro Leu Ala Lys Trp Leu Gly Lys Leu His
65 70 75 80
Lys Gln Asp Leu Leu Cys Pro Pro Ala Pro Pro Val Ser Val Cys Trp
85 90 95
Ile Asn Ala His Val Gly Tyr Gly Val Phe Ala Arg Asp Glu Ile Ala
100 105 110
Pro Trp Thr Tyr Ile Gly Glu Tyr Thr Gly Ile Leu Arg His Arg Gln
115 120 125

Ala Ile Trp Met Asp Glu Asn Asp Tyr Cys Phe Arg Tyr Pro Met Pro
 130 135 140
 Leu Phe Thr Leu Arg Tyr Phe Thr Ile Asp Ser Gly Lys Gln Gly Asn
 145 150 155 160
 Val Thr Arg Phe Ile Asn His Ser Glu Gln Pro Asn Ala Glu Ala Ile
 165 170 175
 Gly Val Phe Ser Glu Gly Leu Phe His Val Ile Ile Arg Thr Ile Ala
 180 185 190
 Pro Ile Tyr Ala Gly Gln Glu Ile Cys Tyr His Tyr Gly Pro Leu Tyr
 195 200 205
 Trp Lys His Arg Lys Lys Arg Glu Glu Phe Ile Pro Glu Glu Glu
 210 215 220

<210>945

<211>265

<212>PRT

<213>Chlamydia pneumoniae

<400>945

Met Gln Gly Phe Phe Pro Leu Ala Ser Gly Ser Lys Gly Asn Ser Ala
 1 5 10 15
 Tyr Leu Gly Thr Asp Ser Cys Lys Ile Leu Ile Asp Leu Gly Val Ser
 20 25 30
 Lys Gln Val Val Thr Arg Glu Leu Leu Ser Met Asn Ile Asp Pro Glu
 35 40 45
 Asp Ile Gln Ala Ile Phe Val Thr His Glu His Ser Asp His Ile Ser
 50 55 60
 Gly Ile Lys Ser Phe Val Lys Ala Tyr Asn Thr Pro Ile Val Cys Asn
 65 70 75 80
 Leu Glu Thr Ala Arg Ala Leu Cys His Leu Leu Asp Ser His Pro Glu
 85 90 95
 Phe Lys Ile Phe Ser Thr Gly Ser Ser Phe Cys Phe Gln Asp Leu Glu
 100 105 110
 Val Gln Thr Phe Asn Val Pro His Asp Ala Val Asp Pro Val Ala Phe
 115 120 125
 Ile Phe His Tyr Arg Glu Glu Lys Leu Gly Phe Cys Thr Asp Leu Gly
 130 135 140
 Trp Val Thr Ser Trp Ile Thr His Glu Leu Tyr Asp Cys Asp Tyr Leu
 145 150 155 160
 Leu Ile Glu Ser Asn His Ser Pro Glu Leu Val Arg Gln Ser Gln Arg
 165 170 175
 Pro Asp Val Tyr Lys Lys Arg Val Leu Ser Lys Leu Gly His Ile Ser
 180 185 190
 Asn Gln Glu Cys Gly Gln Leu Leu Gln Lys Ile Ile Thr Pro Lys Leu
 195 200 205
 Lys Lys Leu Tyr Leu Ala His Leu Ser Thr Glu Cys Asn Thr Ala Glu
 210 215 220
 Leu Ala Leu Ser Thr Val Ser Glu Ser Ile Ala Ser Ile Thr Ser Ile
 225 230 235 240
 Ala Pro Glu Ile Ala Leu Ala Gln Gly Ile Thr Ser Pro Ile Tyr Phe
 245 250 255
 Ser Arg Leu Glu Val Ala Cys Pro Arg
 260 265

<210>946

<211>553

<212>PRT

<213>Chlamydia pneumoniae

<400>946

Asp Gly Ser Ile Ser Pro Leu Pro Gln Glu Glu Ile Pro Gly Ser Lys
 1 5 10 15
 Lys Glu Ser Phe Phe Leu Thr Pro His Pro Cys Lys Arg Phe Leu Thr
 20 25 30
 Lys Phe Val Glu Pro Gln Glu Asn Lys Ala Lys Glu Gly Lys Thr Ile
 35 40 45
 Ala Leu Ser Ser Thr Pro Thr Val Arg Glu Ser Lys Gly Lys Glu
 50 55 60

```

Arg Ala Ala Leu Pro Lys Leu Lys Ser Leu Ala Val Pro Glu Asn Asp
65          70          75          80
Leu Pro Gln Tyr His Leu Leu Ser Lys Asn Arg Glu Ala Arg Pro Glu
85          90          95
Ser Leu Gln Ala Glu Leu Glu Arg Lys Ala Leu Ile Leu Lys Gln Thr
100        105        110
Leu Thr Ser Phe Gly Ile Asp Ala Asp Leu Gly Asn Ile Cys Ser Gly
115        120        125
Pro Thr Leu Ala Ala Phe Glu Val Leu Pro His Ser Gly Val Lys Val
130        135        140
Gln Lys Ile Lys Ser Leu Glu Asn Asp Ile Ala Leu Lys Leu Gln Ala
145        150        155        160
Ser Ser Ile Arg Ile Ile Ala Pro Ile Pro Gly Lys Ala Ala Val Gly
165        170        175
Ile Glu Ile Pro Thr Pro Phe Pro Gln Ala Val Asn Phe Arg Asp Leu
180        185        190
Leu Glu Asp Tyr Gln Lys Thr Asn Arg Lys Leu Gln Ile Pro Leu Leu
195        200        205
Leu Gly Lys Lys Ala Asn Gly Asp Asn Leu Trp Ala Asp Leu Ala Thr
210        215        220
Met Pro His Leu Ile Ile Ala Gly Thr Thr Gly Ser Gly Lys Ser Val
225        230        235        240
Cys Ile Asn Thr Ile Val Met Ser Met Ile Met Thr Thr Leu Pro Ser
245        250        255
Glu Ile Lys Leu Val Ile Ile Asp Pro Lys Lys Val Glu Leu Thr Gly
260        265        270
Tyr Ser Gln Leu Pro His Met Leu Ser Pro Val Ile Thr Glu Ser Arg
275        280        285
Glu Val Tyr Asn Ala Leu Val Trp Leu Val Lys Glu Met Glu Ser Arg
290        295        300
Tyr Glu Ile Leu Arg Tyr Leu Gly Leu Arg Asn Ile Gln Ala Phe Asn
305        310        315        320
Ser Arg Thr Arg Asn Lys Thr Ile Glu Ala Ser Tyr Asp Arg Glu Ile
325        330        335
Arg Glu Thr Met Pro Phe Met Val Gly Ile Ile Asp Glu Leu Ser Asp
340        345        350
Leu Leu Leu Ser Ser Ser Gln Asp Ile Glu Thr Pro Ile Ile Arg Leu
355        360        365
Ala Gln Met Ala Arg Ala Val Gly Ile His Leu Ile Leu Ala Thr Gln
370        375        380
Arg Pro Ser Arg Glu Val Ile Thr Gly Leu Ile Lys Ala Asn Phe Pro
385        390        395        400
Ser Arg Ile Ser Phe Lys Val Ser Asn Lys Val Asn Ser Gln Ile Ile
405        410        415
Ile Asp Glu Pro Gly Ala Glu Asn Leu Met Gly Asn Gly Asp Met Leu
420        425        430
Val Leu Leu Pro Ser Val Phe Gly Thr Ile Arg Ala Gln Gly Ala Tyr
435        440        445
Ile Cys Asp Glu Asp Ile Asn Lys Val Ile Gln Asp Leu Cys Ser Arg
450        455        460
Phe Pro Thr Gln Tyr Val Ile Pro Ser Phe His Ala Phe Asp Asp Ser
465        470        475        480
Asp Ser Asp Asn Ser Gly Glu Lys Asp Pro Leu Phe Ala Gln Ala Lys
485        490        495
Thr Leu Ile Leu Gln Thr Gly Asn Ala Ser Thr Thr Phe Leu Gln Arg
500        505        510
Lys Leu Lys Ile Gly Tyr Ala Arg Ala Ala Ser Leu Ile Asp Gln Leu
515        520        525
Glu Glu Ala Arg Ile Ile Gly Pro Ser Glu Gly Ala Lys Pro Arg Gln
530        535        540
Ile Leu Ile Gln Asn Pro Leu Glu Gly
545        550
<210>947
<211>218

```

<212>PRT

<213>Chlamydia pneumoniae

<400>947

Pro Met Ile Arg Glu Arg Lys Lys Ser Arg His Pro Arg Leu Pro Thr
 1 5 10 15
 Leu Pro Leu Ala Ala Lys Ala Ser Leu Tyr Leu Phe Phe Ala Cys Phe
 20 25 30
 Ser Gly Leu Ser Leu Trp Ser Phe His Arg Asp Gln Pro Cys Thr Gln
 35 40 45
 Asn Trp Ile Gly Leu Leu Gly Trp Ser Phe Ser Ser Phe Leu Leu Tyr
 50 55 60
 Phe Phe Gly Ala Ala Ala Phe Phe Ile Pro Xaa Tyr Phe Leu Trp Leu
 65 70 75 80
 Ser Phe Leu Tyr Phe Arg Arg Thr Pro Arg Pro Leu Phe Phe Tyr Lys
 85 90 95
 Ala Ala Ala Phe Leu Ser Leu Pro Phe Cys Ser Ala Ile Leu Leu Ser
 100 105 110
 Met Leu Ser Pro Val Gly Thr Leu Pro Ala Leu Leu Asp Thr Arg Leu
 115 120 125
 Pro Lys Phe Ile Leu Gly Asn Ile Pro Pro Val Ser Tyr Val Gly Gly
 130 135 140
 Ile Pro Phe Tyr Leu Phe Tyr Glu Gly Gln Ser Phe Cys Leu Lys His
 145 150 155 160
 Leu Ile Gly Ser Val Gly Thr Ala Leu Ile Phe Gly Phe Val Met Leu
 165 170 175
 Phe Ser Val Leu Tyr Leu Cys Gly Arg His Cys Phe Ile Lys Lys Lys
 180 185 190
 Xaa Leu Ser Arg Arg Gly Gln Lys Gly Phe Leu Leu Phe Phe Pro Asn
 195 200 205
 Leu Phe Gln Lys Phe Lys Lys Ile Asn Lys
 210 215

<210>948

<211>162

<212>PRT

<213>Chlamydia pneumoniae

<400>948

Lys Thr Ser Asn Asn Thr Gln Lys Asn Leu Leu Leu Ile Lys Ser Ala
 1 5 10 15
 Glu Ser Ser Ser Leu Gln Leu Ser Leu Ala Ser Ser Ala Ile Ser Ser
 20 25 30
 Arg Val Glu Gln Leu Ser Ser Leu Val Leu Gly Met Glu Asn Ser Asp
 35 40 45
 Phe Ser Ser Leu Arg Asp Val Pro Ile Phe Ser Ala Ile Tyr Glu Ser
 50 55 60
 Ser Thr His Thr Pro Val Pro Thr Pro Leu Val Gly Val Gly Tyr Ile
 65 70 75 80
 Asn Gly Ser Gln Ser Gly Tyr Tyr Asp Thr Gln Arg Glu Ser Leu His
 85 90 95
 Leu Ser Gln Leu Leu Gly Ser Arg Arg Val Glu Val Val Tyr Asn Gln
 100 105 110
 Gly Asn Phe Met Glu Ala Ser Leu Leu Asn Leu Cys Pro Arg Arg Pro
 115 120 125
 Arg Arg Asp Pro Ser Pro Ile Ser Leu Ala Leu Leu Glu Leu Trp Glu
 130 135 140
 Ala Phe Phe Leu Glu His Pro Pro Gly Ser Thr Phe Asn Pro Ile Phe
 145 150 155 160
 Phe Trp

<210>949

<211>127

<212>PRT

<213>Chlamydia pneumoniae

<400>949

Thr Arg Ser Lys Lys Ser Gln Ser Cys Leu Lys Ser Met Ala Gly Phe

1 5 10 15
 Arg Leu Gln Ser Leu Gln Ile Leu Tyr Arg Arg Ile Gly Ser Leu Tyr
 20 25 30
 Leu Gln Lys His Asp Asn Lys Arg Ser Glu Asp Val Leu Asp Ile Glu
 35 40 45
 Lys Asp Arg Tyr Gln Arg Ala Leu Tyr Ser Val His Ala Glu Leu Gly
 50 55 60
 Gly Glu Leu Arg Glu His Arg Lys Leu Arg Tyr Gln Lys Asn Ile Gly
 65 70 75 80
 Leu Lys Val Leu Pro Gly Gly Cys Ser Lys Lys Asn Ala Ser Gln Ser
 85 90 95
 Ser Asn Arg Ala Lys Glu Ile Gly Glu Gly Ser Leu Arg Gly Leu Leu
 100 105 110
 Gly His Arg Phe Ser Lys Glu Ala Ser Met Lys Phe Pro Trp Leu
 115 120 125
 <210>950
 <211>412
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>950
 Asn Thr Pro Gln Val Ala Leu Leu Ile Gln Tyr Phe Phe Gly Asn Gly
 1 5 10 15
 Ala Phe Tyr Val Arg Glu Ala Leu Arg Leu Thr Pro His Ala Gln Asn
 20 25 30
 Ile Val Leu Val Gly Ile Cys Pro Ser Leu Tyr Pro Glu His Pro Arg
 35 40 45
 Ser Phe Tyr Tyr Arg Val Ser Gly Asp Ile Gly Ser Arg Phe Asp Asp
 50 55 60
 Arg Gly Phe Val Asn Ser Gly Val Glu Thr Leu Pro Tyr Ser Ser Gly
 65 70 75 80
 Ser Phe Gly Ile Phe Trp Ile Ser Phe Thr Asp Pro Thr Phe Asn Phe
 85 90 95
 Ala Ile Val Asn Thr Phe Met Arg Thr Ala Gly Ile Asn Glu Val Ser
 100 105 110
 Arg Pro Met Thr Gln Asp Thr Glu Thr Ser Leu Ile Glu Met Arg Asp
 115 120 125
 Leu Ser Glu Gln Gln Glu Ala Asn Asn Thr Asp Ser Leu Glu Gln Glu
 130 135 140
 Glu Ser Leu Met Gly Ile Val Gly His Thr Val Gly Gly Val Ser Met
 145 150 155 160
 Thr Val Thr Ser Ser Pro Asn Ile Phe Tyr Arg Ile Gln Thr Leu Leu
 165 170 175
 Gly Leu Pro Glu Thr Leu Ala Glu Ala Glu Asn Pro Thr Phe Pro
 180 185 190
 Asn Ser Thr Ile Asp Ser Leu Ala Glu Ile Met Met Asn Leu Val Arg
 195 200 205
 Ile Ser Asp Ala Val Ser Ile Phe Trp Ile Phe Pro Ile Val Asp Thr
 210 215 220
 Thr Tyr Asn Gly Val Leu Leu Ala Val Cys Ile Gly Phe Phe Gly Ile
 225 230 235 240
 Asn Gly Ile Cys Ser Thr Phe Leu Met Leu Thr Asn Pro Arg Ser Arg
 245 250 255
 Arg Asp Arg Trp Arg Asn Leu Arg Ile Met Val Leu Cys Tyr Arg Ser
 260 265 270
 Leu Gly Ser Gly Met Asn Leu Phe Asp Leu Ser Asn Asn Val Arg Met
 275 280 285
 Ala Ala Arg Arg His Val Thr Ser Cys Thr Val Ala Leu Tyr Ala Met
 290 295 300
 Val Thr Leu Phe Gly Trp Thr Val Ala Ile Gln Asp Ala Leu Gln Tyr
 305 310 315 320
 Gly Phe Pro Ser Val Arg Asp Ala Phe Tyr Arg Tyr Cys Leu Arg His
 325 330 335
 Arg Tyr Cys Leu Thr Gln Arg Asn Glu Asp Ser Leu Gln Thr Thr Gly
 340 345 350

Thr Arg Phe Gln Val Thr Arg Thr His Leu Glu Asp Gln Gln Met Val
 355 360 365
 Ala Ser Ile Leu Asn Leu Ser Val Phe Gly Leu Phe Gly Phe Val
 370 375 380
 Gly Leu Met Thr Thr Phe Gly Gly Leu Glu Ile Ser Pro Ser Cys Arg
 385 390 395 400
 Trp Asp Ala Ala Asn Asn Arg Thr Val Gly Ile Phe
 405 410

<210>951

<211>117

<212>PRT

<213>Chlamydia pneumoniae

<400>951

Lys Ile Phe Gly Leu Glu Val Thr Val Met Glu Thr Pro Pro Thr Val
 1 5 10 15
 Cys Pro Thr Ile Pro Ile Lys Leu Ser Ser Cys Ser Lys Glu Ser Val
 20 25 30
 Leu Phe Ala Ser Cys Cys Ser Leu Arg Ser Leu Ile Ser Ile Asn Glu
 35 40 45
 Val Ser Val Ser Cys Val Met Gly Leu Glu Thr Ser Leu Ile Pro Ala
 50 55 60
 Val Arg Ile Lys Val Phe Thr Ile Ala Lys Leu Asn Val Gly Ser Val
 65 70 75 80
 Asn Glu Ile Gln Lys Ile Pro Lys Leu Pro Glu Glu Tyr Gly Arg Val
 85 90 95
 Ser Thr Pro Glu Phe Thr Asn Pro Leu Ser Ser Asn Arg Glu Pro Ile
 100 105 110
 Ser Pro Glu Thr Arg
 115

<210>952

<211>431

<212>PRT

<213>Chlamydia pneumoniae

<400>952

Met Thr Trp Leu Ser Gly Leu Tyr Phe Ile Cys Ile Ala Ser Leu Ile
 1 5 10 15
 Phe Cys Ala Ile Gly Val Ile Leu Ala Gly Val Ile Leu Leu Ser Arg
 20 25 30
 Lys Leu Phe Ile Lys Val His Pro Cys Lys Leu Lys Ile Asn Asp Asn
 35 40 45
 Glu Glu Leu Thr Lys Thr Val Glu Ser Gly Gln Thr Leu Leu Val Ser
 50 55 60
 Leu Leu Ser Ser Gly Ile Pro Ile Pro Ser Pro Cys Gly Gly Lys Ala
 65 70 75 80
 Thr Cys Lys Gln Cys Lys Val Arg Val Val Lys Asn Ala Asp Glu Pro
 85 90 95
 Leu Glu Thr Asp Arg Ser Thr Phe Ser Lys Arg Gln Leu Glu Glu Gly
 100 105 110
 Trp Arg Leu Ser Cys Gln Cys Lys Val Gln His Asp Met Ser Leu Glu
 115 120 125
 Ile Glu Glu Arg Tyr Leu Asn Ala Ser Ser Trp Glu Gly Thr Val Ile
 130 135 140
 Ser Asn Asp Asn Val Ala Thr Phe Ile Lys Glu Leu Val Val Ala Val
 145 150 155 160
 Asp Pro Asn Lys Pro Ile Pro Phe Lys Pro Gly Gly Tyr Leu Gln Ile
 165 170 175
 Thr Val Pro Ser Tyr Lys Thr Asn Ser Ser Asp Trp Lys Gln Thr Met
 180 185 190
 Ala Pro Glu Tyr Tyr Ser Asp Trp Glu His Phe His Leu Phe Asp Gln
 195 200 205
 Val Ile Asp Asn Ser Gln Leu Pro Ala Asp Ser Ala Asn Lys Ala Tyr
 210 215 220
 Ser Leu Ala Ser Tyr Pro Ala Glu Leu Pro Thr Ile Lys Phe Asn Ile
 225 230 235 240

Arg Ile Ala Thr Pro Pro Phe Ile Asn Gly Lys Pro Asn Ser Glu Ile
 245 250 255
 Pro Trp Gly Val Cys Ser Ser Tyr Val Phe Ser Leu Lys Pro Gly Asp
 260 265 270
 Lys Ile Thr Val Ser Gly Pro Tyr Gly Glu Ser Phe Met Lys Asp Asp
 275 280 285
 Asp Arg Pro Leu Ile Phe Leu Ile Gly Gly Ala Gly Ser Ser Phe Gly
 290 295 300
 Arg Ser His Ile Leu Asp Leu Leu Leu Asn Lys His Ser Lys Arg Glu
 305 310 315 320
 Ile Asp Leu Trp Tyr Gly Ala Arg Ser Leu Lys Glu Asn Ile Tyr Gln
 325 330 335
 Glu Glu Tyr Glu Asn Leu Glu Arg Gln Phe Pro Asn Phe His Tyr His
 340 345 350
 Leu Val Leu Ser Glu Pro Leu Pro Glu Asp Ile Ala Ala Gly Trp Asp
 355 360 365
 Lys Asp Asp Pro Thr Lys Thr Asn Phe Leu Phe Arg Ala Phe Asn Leu
 370 375 380
 Gly Gln Leu Ser Arg Leu Asp Asn Pro Glu Asp Tyr Leu Tyr Tyr Val
 385 390 395 400
 Cys Gly Pro Pro Leu His Asn Ser Ser Ile Leu Lys Leu Leu Gly Asp
 405 410 415
 Tyr Gly Val Glu Arg Ser Ser Ile Ile Leu Asp Asp Phe Gly Ser
 420 425 430

<210>953

<211>106

<212>PRT

<213>Chlamydia pneumoniae

<400>953

Leu Leu Ser Ser Leu Pro Leu Phe Ala Glu Glu Glu Ala Ala Gln Ser
 1 5 10 15
 Lys Asn Thr Phe Val Gln Pro Ala Val Met Leu Ala Ile Ala Ile Leu
 20 25 30
 Phe Phe Tyr Phe Ile Leu Trp Arg Pro Glu Gln Lys Arg Arg Lys Ala
 35 40 45
 Met Glu Lys Arg Lys Asn Asp Leu Ala Lys Gly Asp Lys Val Thr Ala
 50 55 60
 Met Gly Ile Ile Gly Thr Val Asp Asp Ile Arg Glu His Thr Val Ile
 65 70 75 80
 Leu Asn Ile Ala Ser Gly Lys Val Glu Val Leu Lys Gly Ala Ile Ser
 85 90 95
 Glu Ile Leu Lys Pro Asn Asp Asn Lys Ser
 100 105

<210>954

<211>401

<212>PRT

<213>Chlamydia pneumoniae

<400>954

Met Ser Thr Met Gln Asn Cys Pro His Phe Gly Val Cys Gly Gly Cys
 1 5 10 15
 Ser Phe Pro Gln Ser Asn Tyr Ser Asp Ser Leu Lys Lys Lys Glu Glu
 20 25 30
 Leu Leu His Gln Leu Phe Ala Pro Leu Val Pro Ser Asp Met Ile Ala
 35 40 45
 Pro Ile Ile Pro Cys Ser Pro Ser Leu Arg Gly Arg Asn Lys Met Glu
 50 55 60
 Phe Ser Phe Phe Gln Thr Tyr Glu Gly Glu Lys Ser Leu Gly Phe Ile
 65 70 75 80
 Ser Ser Thr Lys Pro Lys Lys Gly Ile Pro Val Thr Thr Cys Leu Leu
 85 90 95
 Ile His Glu Gln Thr Met Asp Ile Leu Lys Leu Thr Arg Glu Trp Trp
 100 105 110
 Asp Lys His Pro Glu Leu Met Ala Tyr Phe Pro Pro Lys Asn Lys Gly
 115 120 125

Ser Leu Cys Thr Leu Thr Val Arg Thr Gly Ser Pro Gln Gln Asn Phe
 130 135 140
 Met Val Ile Leu Thr Thr Ser Gly Thr Pro Glu Tyr Arg Val Asn Glu
 145 150 155 160
 Ala Cys Ile Asp Glu Trp Lys Glu Ile Leu Leu Ser Ser Ser Leu Asn
 165 170 175
 Ile Ala Ser Ile Tyr Trp Glu Glu Lys Val Ala Ala Arg Gly Ile Ser
 180 185 190
 Thr Tyr Tyr Glu Thr Lys Leu Leu Tyr Gly Ala Pro Ser Ile Gln Gln
 195 200 205
 Lys Leu Ser Leu Pro Ser Asp Gly Asn Ser Ala Ser Phe Ser Leu Arg
 210 215 220
 Pro Arg Ser Phe Phe Gln Pro Gln Ile Thr Gln Ala Ala Lys Ile Ile
 225 230 235 240
 Glu Thr Ala Lys Glu Phe Ile Asn Pro Glu Gly Ser Glu Thr Leu Leu
 245 250 255
 Asp Leu Tyr Cys Gly Ala Gly Thr Ile Gly Ile Met Leu Ser Pro Tyr
 260 265 270
 Val Lys Asn Val Ile Gly Val Glu Ile Ile Pro Asp Ala Val Ala Ser
 275 280 285
 Ala Gln Glu Asn Ile Lys Ala Asn Asn Lys Glu Asp Cys Val Glu Val
 290 295 300
 Tyr Leu Glu Asp Ala Lys Ala Phe Cys Lys Arg Asn Glu Asn Cys Lys
 305 310 315 320
 Ala Pro Asp Val Ile Ile Ile Asp Pro Pro Arg Cys Gly Met Gln Ser
 325 330 335
 Lys Val Leu Lys Tyr Ile Leu Arg Ile Gly Ser Pro Lys Ile Val Tyr
 340 345 350
 Ile Ser Cys Asn Pro Lys Thr Gln Phe Gln Glu Cys Ala Asp Leu Ile
 355 360 365
 Ser Gly Gly Tyr Arg Ile Lys Lys Met Gln Pro Ile Asp Gln Phe Pro
 370 375 380
 Tyr Ser Thr His Leu Glu Asn Ile Ile Leu Leu Glu Arg Glu Ile Asp
 385 390 395 400
 Leu

<210>955

<211>123

<212>PRT

<213>Chlamydia pneumoniae

<400>955

Met Ala Leu Lys Asp Thr Ala Lys Lys Met Lys Asp Leu Leu Asp Ser
 1 5 10 15
 Ile Gln His Asp Leu Ala Lys Ala Glu Lys Gly Asn Lys Ala Ala Ala
 20 25 30
 Gln Arg Val Arg Thr Asp Ser Ile Lys Leu Glu Lys Val Ala Lys Leu
 35 40 45
 Tyr Arg Lys Glu Ser Ile Lys Ala Glu Lys Ser Gly Leu Leu Lys Arg
 50 55 60
 Lys Pro Ser Thr Lys Ala Pro Ala Lys Val Lys Lys Thr Ala Glu Lys
 65 70 75 80
 Lys Ala Pro Lys Lys Ser Ser Ala Ala Ala Lys Thr Ser Lys Ala
 85 90 95
 Val Lys Ala Ser Lys Pro Ala Ser Lys Lys Thr Ala Ala Lys Lys Val
 100 105 110
 Lys Lys Pro Ser Lys Ala Arg Gly Phe Arg Lys
 115 120

<210>956

<211>822

<212>PRT

<213>Chlamydia pneumoniae

<400>956

Met Lys Lys Leu Tyr His Pro Thr Leu Phe Leu Arg Pro Leu Ile Arg
 1 5 10 15

Leu Ser Leu Ile Phe Ala Leu Ser Leu Thr Leu Ile Ser Gly Asn Phe
 20 25 30
 Pro Gln Gln Lys Ser Phe Gly His Cys Cys Ala Asp Met His Ser Ala
 35 40 45
 Leu Ile Ser Gly Lys Asn Cys Glu Glu Leu Phe Ala Asp Phe Ile Glu
 50 55 60
 Arg Val Leu Ala Asp Arg Glu Thr Leu Thr Ala Arg Asp Trp Gly Thr
 65 70 75 80
 Val Val Val Leu Val Arg Glu Tyr Leu Leu Lys Cys Ile Arg Lys Gly
 85 90 95
 Asp Cys Asp Tyr Gly Val Lys Ile Leu Gln Lys Leu Leu Ala Leu Arg
 100 105 110
 Leu Pro Lys Asp Ala Arg Lys Asp Leu Gln Ile Leu Trp His Arg Leu
 115 120 125
 Asn Pro Glu Gln Ala Pro Leu Arg Asp Val Val Asp Gln Leu Phe Thr
 130 135 140
 Ile Gly Cys His Glu Ser Leu Gln Asp His Leu Leu Phe Glu Leu Tyr
 145 150 155 160
 Thr Val Thr Leu His Ser Gly Tyr Glu Asn Arg Lys Gln Asp Met Leu
 165 170 175
 Leu Ala Lys Glu Gln Gly Asp Tyr Lys Lys Ala Ile Glu Leu Ala Lys
 180 185 190
 Glu Leu Val Ala Ala Leu Glu Lys Gly Ser Cys Ser Pro His Pro Glu
 195 200 205
 Ile Val Gln Ile Glu Lys Thr Phe Leu Gln Lys Thr Leu Leu Ala Leu
 210 215 220
 Gln Ile Lys Val Ala Gln Glu Ala Gln Glu Ser Cys Asp Ala Leu Leu
 225 230 235 240
 Thr Pro Tyr Cys Leu Ser Glu Ile Ala Tyr Thr Glu Ala Met Asp Ala
 245 250 255
 Leu Val Leu Arg Ile Ala Arg Gly Glu Val Ser Arg Thr Asn Glu Val
 260 265 270
 Asp Ser Val Leu Leu Ser His Ala Leu Gln His Leu Pro Phe Ala Arg
 275 280 285
 Glu Lys Ala Ile Pro Glu Leu Glu Val Leu Ile Asp His Gly Ala Tyr
 290 295 300
 Leu Glu Ser Thr Leu Leu Tyr Tyr Ala Tyr Phe Ser Leu Leu Glu Leu
 305 310 315 320
 Tyr His Gln Asn Lys Asp Phe Ala Ser Leu Glu Arg Leu Leu Glu Lys
 325 330 335
 Gly Asp Ala Val Phe Val Pro Glu His Pro Tyr Phe Pro Glu Tyr Gly
 340 345 350
 Phe Phe Leu Gly Ala Tyr Phe Tyr Ala Lys Gly Lys Tyr Glu Ser Ala
 355 360 365
 Glu Lys Val Phe Leu Gln Ile Ile Asp Pro Ala Val Lys Leu Gly Ala
 370 375 380
 Thr Phe Ala Arg Ala Tyr Glu Tyr Leu Gly Cys Ile Ala Tyr Val Gln
 385 390 395 400
 Asn His Tyr Glu Lys Ala Glu Glu Tyr Phe Leu Arg Ala Tyr Lys Ser
 405 410 415
 Trp Gly Arg Glu Glu Ser Gly Ile Gly Leu Phe Leu Ala Tyr Ala Val
 420 425 430
 Gln Lys Lys Lys Thr Ala Cys Glu Asp Met Leu Tyr His Pro Lys Phe
 435 440 445
 Ser Phe Thr Tyr Arg His Leu Leu Asp Ser Leu Cys Ser Leu Ser Tyr
 450 455 460
 Pro His Gly Glu Asn Lys Gly Ser Ser Ala Ile Gln Arg Val His Arg
 465 470 475 480
 Ala Val Pro Glu Leu Ser Glu Ile Tyr Ser Arg Cys Ile Tyr Asp Met
 485 490 495
 Ile Lys Tyr Arg Asn Val Thr Tyr Thr His Pro Ile Ile Glu Leu Ala
 500 505 510
 Tyr Asn Gln Val Arg Asn Leu Glu Lys Arg Asn Leu Glu Glu Ile Cys
 515 520 525

Arg Asp Ala Gln Asp Pro Glu Tyr Asp Lys Ala Leu Ala Phe Trp Gly
 530 535 540
 Ala Leu Gln Ser Gly Ala Ser Val Pro Arg Ser Leu Ile Glu Ser Ser
 545 550 555 560
 Asp Val Asp Glu Ala Gly Ile Thr Ile Arg Cys Tyr Glu Ala Leu Tyr
 565 570 575
 Phe His Asn Pro Asp Ala Ile Ala Met Leu Pro Gln Ala Phe Ser Glu
 580 585 590
 Glu Cys Asn Ser Trp Gln Thr Ala Leu Arg Leu Val Trp Thr Leu Val
 595 600 605
 Arg Pro Lys Gly Ala Pro Asn His Ala Lys Tyr Trp Asp His Leu Val
 610 615 620
 Leu Arg Pro His Gly Asp Ser Leu Tyr Phe Phe Gly Tyr Asp Leu Gln
 625 630 635 640
 Glu Tyr Leu Ile Gly Lys Glu Asp Ala Leu Lys His Leu Ser Val Phe
 645 650 655
 Ala Glu Leu Phe Pro Lys Ser Ser Leu Ser Leu Val Tyr Tyr Leu
 660 665 670
 Gln Gly Tyr Ser Glu Ser Ser Ala Leu Arg Lys Val Gly Trp Phe Val
 675 680 685
 Lys Ala Leu Glu Glu Phe Thr Glu Ile Ser Trp Ser Gly Glu His Met
 690 695 700
 Lys Thr Trp Ala Tyr Ile Tyr Tyr Met Val Lys Leu Asp Leu Ala Asp
 705 710 715 720
 Thr Tyr Ile Ser Leu Gly Asn Phe Ser Gln Ala Val His Ile Leu Glu
 725 730 735
 Glu Val Lys Glu Asp Trp Gln Val Ala Ser His Pro Lys Leu His Phe
 740 745 750
 Leu Lys Gly Glu Asp Cys Tyr Leu Ala Met Glu Leu Arg Trp Val Glu
 755 760 765
 Gly Leu Ala Tyr Ala Tyr Phe Gln Leu His Glu Thr Ala His Leu Ser
 770 775 780
 Asn His Leu Leu Glu His Val Glu Lys Asn Leu Ile Ser Pro Arg Ser
 785 790 795 800
 Tyr Arg Asp Tyr Tyr Gly Glu Ser Leu Gln Arg Thr Leu Gly Leu Cys
 805 810 815
 Gln Arg Phe Leu Gly Val
 820

<210>957

<211>150

<212>PRT

<213>Chlamydia pneumoniae

<400>957

His Gln Leu Arg Leu Ala Ser Arg Gln Leu Phe Ala Ser Gln Arg Leu
 1 5 10 15
 Trp His Ala Ile Cys Arg Arg Ala Ser Pro Leu Gly Asn Arg Leu Glu
 20 25 30
 Phe Ser Asn Leu Pro Ala Ser Thr Pro Gly Lys Thr Val Leu Ser Leu
 35 40 45
 Leu Ile Glu Gly Lys Trp Arg Glu Ser Glu Ala His Ala Phe Ala Ile
 50 55 60
 Ala Ala Leu Ser Glu Tyr Leu Asn Ile Asn Gln Lys Pro Asp Ala Phe
 65 70 75 80
 Ala Leu Phe Ser Ser Gln Asp Gly Met Pro Gln His Ala Val Gly Phe
 85 90 95
 Leu Glu Arg Lys Glu Arg Ile Leu Pro His Leu Pro Gly Asn Leu Lys
 100 105 110
 Ile Val Gly Gln Asn Ile Ala Gly Pro Gly Leu Asn Arg Cys Ile Ala
 115 120 125
 Ser Ala Tyr His Ala Ile Cys Asp Leu His Thr Glu Glu Thr Leu Ala
 130 135 140
 Gln Pro Gln Ser Ser Leu
 145 150
 <210>958

WO 99/27105

PCT/IB98/01890

<211>354

<212>PRT

<213>Chlamydia pneumoniae

<400>958

Ala Glu Arg Arg Phe Cys Val Lys Arg Ala Ile Ile Ile Gly Ala Gly
 1 5 10 15
 Ile Ser Gly Leu Ala Ala Gly Trp Trp Leu His Lys Lys Phe Pro Gln
 20 25 30
 Ala Glu Ile Leu Val Leu Asp Lys Glu Ala Tyr Ala Gly Gly Phe Val
 35 40 45
 Arg Thr Glu Ser Pro Gln Gly Phe Ser Phe Asp Leu Gly Pro Lys Gly
 50 55 60
 Phe Leu Thr Arg Gly Asp Gly Glu Tyr Thr Leu Lys Leu Ile His Glu
 65 70 75 80
 Leu Gly Leu Gln Asn Ser Leu Ile Phe Ser Asp Arg Ala Ala Lys Asn
 85 90 95
 Arg Phe Val Tyr Tyr Arg Gly Lys Ala Arg Lys Ile Ser Thr Trp Thr
 100 105 110
 Leu Leu Arg Lys Gly Leu Leu Pro Ser Leu Ile Lys Asp Phe Arg Ala
 115 120 125
 Pro Cys Tyr Thr Gln Asp Ser Ser Val Gln Asp Phe Leu Lys Arg His
 130 135 140
 Ser Ser Gln Asn Phe Thr Ser Tyr Ile Leu Asp Pro Leu Ile Thr Ala
 145 150 155 160
 Ile Arg Ala Gly His Ser Ser Ile Leu Ser Thr His Met Ala Phe Pro
 165 170 175
 Glu Leu Ala Lys Arg Glu Ala Ser Ser Gly Ser Leu Leu Arg Ser Tyr
 180 185 190
 Leu Lys Asn Arg Ser Pro Lys Lys Ser Lys Thr Asp Arg Tyr Leu Ala
 195 200 205
 Ser Leu Ser Pro Ser Met Gly Thr Leu Ile Thr Thr Ile Gln Glu Lys
 210 215 220
 Leu Pro Ala Thr Trp Lys Phe Ser Thr Ser Val Thr His Ile Asp Cys
 225 230 235 240
 Ser Pro Lys Glu Ala Cys Val Thr Thr Pro Ser Glu Thr Phe Phe Ala
 245 250 255
 Asp Met Val Ile Tyr Thr Gly Pro Leu Gln Gln Leu Pro Val Leu Leu
 260 265 270
 Pro Asn Tyr Gly Ile Glu Asn Leu Ser Lys Arg Val Leu Pro Trp Asn
 275 280 285
 Leu Ser Ser Ile Ser Leu Gly Trp His His Ala Asn Phe Ser Leu Pro
 290 295 300
 Lys Gly Tyr Gly Met Leu Phe Ala Asp Glu Leu Pro Leu Leu Gly Ile
 305 310 315 320
 Val Trp Asn Ser Gln Ile Phe Pro Gln Val Arg Gln Gly Lys Gln Cys
 325 330 335
 Ser Pro Phe Ser Leu Lys Ala Asn Gly Gly Asn Gln Lys Leu Met Pro
 340 345 350
 Leu Arg

<210>959

<211>460

<212>PRT

<213>Chlamydia pneumoniae

<400>959

Phe Leu Met Phe Asn Val Asn Phe Lys Phe Leu Glu Gly Leu His Gln
 1 5 10 15
 Pro Ala Pro Arg Tyr Thr Ser Tyr Pro Thr Ala Leu Glu Trp Glu Pro
 20 25 30
 Ser Asp Ala Ala Pro Ala Leu Leu Ala Phe Gln Arg Xaa Arg Xaa Asn
 35 40 45
 Xaa Gln Pro Leu Ser Leu Tyr Phe His Ile Pro Phe Cys Gln Ser Met
 50 55 60
 Cys Leu Tyr Cys Gly Cys Ser Val Val Leu Asn Arg Arg Glu Asp Ile

65 70 75 80
 Val Glu Ala Tyr Ile Asn Thr Leu Ile Gln Glu Met Lys Leu Val Val
 85 90 95
 Glu Thr Ile Gly Phe Arg Pro Gln Val Ser Arg Ile His Phe Gly Gly
 100 105 110
 Gly Thr Pro Ser Arg Leu Ser Arg Glu Leu Phe Thr Leu Leu Phe Asp
 115 120 125
 His Ile His Lys Leu Phe Asp Leu Ser His Ala Glu Glu Ile Ala Ile
 130 135 140
 Glu Val Asp Pro Arg Ser Leu Arg Asn Asp Met Glu Lys Ala Asp Phe
 145 150 155 160
 Phe Gln Asn Val Gly Phe Asn Arg Val Ser Leu Gly Val Gln Asp Thr
 165 170 175
 Gln Ala Asp Val Gln Glu Ala Val Arg Arg Arg Gln Ser His Glu Glu
 180 185 190
 Ser Leu Lys Ala Tyr Glu Lys Phe Lys Glu Leu Ala Phe Gln Ser Ile
 195 200 205
 Asn Ile Asp Leu Ile Tyr Gly Leu Pro Lys Gln Thr Lys Glu Ser Phe
 210 215 220
 Ser Lys Thr Ile Gln Asp Ile Leu Ala Met Tyr Pro Asp Arg Leu Ala
 225 230 235 240
 Leu Phe Ser Phe Ala Ser Val Pro Trp Ile Lys Pro His Gln Lys Ala
 245 250 255
 Met Lys Ala Ser Asp Met Pro Ser Met Glu Glu Lys Phe Ala Ile Tyr
 260 265 270
 Ser Gln Ser Arg His Leu Leu Thr Lys Ala Gly Tyr Gln Ala Ile Gly
 275 280 285
 Met Asp His Phe Ser Leu Pro His Asp Pro Leu Thr Leu Ala Phe Lys
 290 295 300
 Asn Lys Thr Leu Ile Arg Asn Phe Gln Gly Tyr Ser Leu Pro Pro Glu
 305 310 315 320
 Glu Asp Leu Leu Gly Leu Gly Met Thr Ser Thr Ser Phe Ile Arg Gly
 325 330 335
 Ile Tyr Leu Gln Asn Ala Lys Thr Leu Glu Glu Tyr His Asn Thr Val
 340 345 350
 Leu Arg Gly Thr Phe Ala Thr Val Lys Ser Lys Ile Leu Thr Glu Asp
 355 360 365
 Asp Arg Ile Arg Lys Trp Ala Ile His Lys Leu Met Cys Thr Phe Thr
 370 375 380
 Ile Asn Lys Glu Glu Phe Asn Leu Phe Gly Tyr Glu Phe Asp Thr
 385 390 395 400
 Tyr Phe Ile Glu Ser Arg Asp Arg Leu Ile Ser Met Glu Thr Thr Gly
 405 410 415
 Leu Ile His Asn Ser Pro Gly Ser Leu Lys Val Thr Pro Leu Gly Glu
 420 425 430
 Leu Phe Val Arg Val Ile Ala Thr Ala Phe Asp His Tyr Phe Leu Asn
 435 440 445
 Lys Val Ser Lys Lys Glu Cys Phe Ser Ala Ser Ile
 450 455 460

<210>960

<211>281

<212>PRT

<213>Chlamydia pneumoniae

<400>960

Ser Tyr Cys Arg Ala Thr Leu Leu Gly Pro Ser Leu Leu His Val Asp
 1 5 10 15
 Ala Ala Ile Leu Phe Ala Asp Ile Leu Ser Ile Leu Asp Gly Phe Ala
 20 25 30
 Val Thr Tyr Asp Phe Ala Pro Gly Pro Arg Ile Gln Phe Ser Pro Glu
 35 40 45
 Gln Pro Phe Thr Phe Thr Ser Asp Pro Gln Thr Ile Phe Ser Tyr Leu
 50 55 60
 Leu Asp Ala Ile Arg Thr Leu Lys Gln Lys Leu Pro Val Pro Leu Ile
 65 70 75 80

Met	Ala	Met	Asp	Phe	Asn	Pro	Val	Asn	Leu	Asp	Phe	Ser	Ile	Ser	Lys
1				5					10					15	
Glu	Phe	Lys	Glu	Glu	Thr	Leu	Pro	Leu	Leu	Leu	Glu	Asn	Ile	His	Pro
			20					25					30		
Gly	Ala	Thr	Ala	Phe	Leu	Ala	Ala	Lys	Met	Phe	His	Asp	Cys	Arg	Ala
		35					40					45			
Ser	Val	Ile	Met	Ile	Thr	Thr	Pro	Ala	Arg	Leu	Asp	Asp	Leu	Phe	Glu
	50					55					60				
Asn	Leu	Arg	Thr	Phe	Leu	Asp	Gln	Ala	Pro	Val	Glu	Phe	Pro	Ser	Ser
65					70					75				80	
Glu	Ile	Asp	Leu	Ser	Pro	Lys	Leu	Val	Asn	Ile	Asp	Ala	Val	Gly	Lys
				85					90					95	
Arg	Asp	His	Leu	Leu	Tyr	Ser	Leu	Asn	Gln	His	Arg	Ala	Pro	Ile	Phe
			100					105					110		
Cys	Val	Thr	Thr	Leu	Lys	Ala	Leu	Leu	Glu	Lys	Thr	Arg	Ser	Pro	Gln
		115					120					125			
Ala	Thr	Ser	Gln	Gln	His	Leu	Asp	Leu	Ala	Val	Gly	Asp	Val	Leu	Asp
	130					135				140					
Pro	Glu	Ala	Thr	Thr	Glu	Leu	Cys	Lys	Ser	Leu	Gly	Tyr	Ser	Gln	Val
145					150					155				160	
Met	Leu	Thr	Ser	Glu	Lys	Gly	Glu	Phe	Ser	Cys	Arg	Gly	Gly	Ile	Val
				165					170				175		
Asp	Ile	Phe	Pro	Leu	Ser	Ser	Pro	Glu	Pro	Phe	Arg	Ile	Glu	Phe	Trp
			180					185					190		
Gly	Glu	Lys	Ile	Ile	Ser	Ile	Arg	Ser	Tyr	Asn	Pro	Ser	Asp	Gln	Leu
		195					200				205				
Ser	Thr	Gly	Lys	Val	Ser	Lys	Ile	Ser	Ile	Ser	Pro	Ala	Tyr	Thr	Glu
	210					215					220				
Glu	Ala	Ser	Gly	Gly	Asn	Tyr	Ser	His	Ser	Leu	Leu	Asp	Tyr	Phe	Ser
225					230					235				240	
Thr	Pro	Pro	Leu	Tyr	Leu	Phe	Asp	Asn	Leu	Glu	Ile	Leu	Glu	Asp	Asp
				245					250					255	
Phe	Ala	Asp	Ile	Ser	Gly	Thr	Leu	Ser	Ser	Leu	Pro	Asp	Arg	Phe	Phe

260 265 270
 Ser Ile Gly Thr Leu Tyr Asp Arg Ile Ser Thr Ser Asn Gln Val Tyr
 275 280 285
 Phe Ser Glu Thr Pro Phe Pro Asn Val Lys Asn Leu Lys Glu Asn Arg
 290 295 300
 Val Ile Ile Glu Ala Phe His Arg Asn Met Glu Ala Ser Arg Gln Ala
 305 310 315 320
 Ile Pro Ile Leu Tyr Pro Glu Gln Ile Ile Gln Asn Asp Glu Asn Pro
 325 330 335
 Leu Leu Ala Phe Leu Gln His Leu Gln Glu Tyr Met Pro Pro His Gly
 340 345 350
 Lys Pro Leu Lys Leu Ala Ile Tyr Ser Thr Lys Thr Lys Ser Leu Lys
 355 360 365
 Glu Ala Arg Ala Leu Ala Glu Thr Val Ala Arg Gly Asp Val Glu Ile
 370 375 380
 Tyr Glu Lys Thr Gly Asn Leu Thr Ser Ser Phe Ala Leu Val Asn Glu
 385 390 395 400
 Ala Phe Ala Ala Ile Ser Leu Ser Glu Phe Ala Ser Thr Lys Val Leu
 405 410 415
 Arg Arg Gln Lys Gln Arg Thr His Phe Ser Val Thr Thr Glu Glu Val
 420 425 430
 Phe Val Pro Ile Pro Gly Glu Thr Val Val His Ile His Asn Gly Ile
 435 440 445
 Gly Lys Phe Leu Gly Ile Glu Lys Lys Pro Asn His Leu Asn Ile Glu
 450 455 460
 Thr Asp Tyr Leu Val Leu Glu Tyr Ala Asp Lys Ala Arg Leu Tyr Val
 465 470 475 480
 Pro Ser Asn Gln Ala Tyr Leu Ile Ser Arg Tyr Val Gly Thr Ser Asp
 485 490 495
 Lys Ala Ala Asp Leu His His Leu Asn Ser Ser Lys Trp Lys Arg Ser
 500 505 510
 Arg Asp Leu Thr Glu Lys Ser Leu Ile Val Tyr Ala Glu Lys Leu Leu
 515 520 525
 Gln Leu Glu Ala Gln Arg Ser Thr Thr Pro Ala Phe Val Tyr Pro Pro
 530 535 540
 His Gly Glu Ser Val Ile Lys Phe Ala Glu Thr Phe Pro Tyr Glu Glu
 545 550 555 560
 Thr Pro Asp Gln Leu Lys Thr Ile Asp Gln Ile Tyr Asn Asp Met Met
 565 570 575
 Ser Pro Lys Leu Met Asp Arg Leu Ile Cys Gly Asp Ala Gly Phe Gly
 580 585 590
 Lys Thr Glu Val Ile Met Arg Ala Val Lys Ala Val Cys Asp Gly
 595 600 605
 His Arg Gln Val Ile Val Met Val Pro Thr Thr Ile Leu Ala Thr Gln
 610 615 620
 His Tyr Glu Thr Phe Lys Glu Arg Met Ala Gly Leu Pro Ile Glu Ile
 625 630 635 640
 Ala Val Leu Ser Arg Phe Ser Gln Ala Lys Val Gln Lys Leu Ile Cys
 645 650 655
 Glu Gln Val Ala Ser Gly Gln Ile Asp Ile Ile Ile Gly Thr His Lys
 660 665 670
 Leu Ile Asn Lys Ser Leu Glu Phe Lys Asn Pro Gly Leu Leu Ile Ile
 675 680 685
 Asp Glu Glu Gln Arg Phe Gly Val Lys Val Lys Asp Asn Leu Lys Glu
 690 695 700
 Arg Tyr Pro Met Ile Asp Cys Leu Thr Val Ser Ala Thr Pro Ile Pro
 705 710 715 720
 Arg Thr Leu His Met Ser Leu Ser Gly Ala Arg Asp Leu Ser Val Ile
 725 730 735
 Ala Met Pro Pro Leu Asp Arg Leu Pro Val Ser Thr Phe Val Met Glu
 740 745 750
 His Asn Thr Glu Thr Leu Thr Ala Ala Leu Arg His Glu Leu Leu Arg
 755 760 765
 Gly Gly Gln Ala Tyr Val Ile His Asn Arg Ile Glu Ser Ile Tyr Thr

770 775 780
 Leu Ala Glu Thr Ile Arg Asn Leu Ile Pro Glu Ala Arg Ile Gly Val
 785 790 795 800
 Ala His Gly Gln Met Gly Ala Glu Asp Leu Ser Asn Ile Phe Thr Lys
 805 810 815
 Phe Lys Asn Gln Lys Thr Asp Ile Leu Val Ala Thr Ala Leu Ile Glu
 820 825 830
 Asn Gly Ile Asp Ile Pro Asn Ala Asn Thr Ile Leu Ile Asp His Ala
 835 840 845
 Asp Lys Phe Gly Met Ala Asp Leu Tyr Gln Met Lys Gly Arg Val Gly
 850 855 860
 Arg Trp Asn Lys Lys Ala Tyr Cys Tyr Phe Leu Val Pro His Leu Asp
 865 870 875 880
 Arg Leu Ser Gly Pro Ala Ala Lys Arg Leu Ala Ala Leu Asn Lys Gln
 885 890 895
 Glu Tyr Gly Gly Gly Met Lys Ile Ala Leu His Asp Leu Glu Ile Arg
 900 905 910
 Gly Ala Gly Asn Ile Leu Gly Thr Asp Gln Ser Gly His Ile Gly Thr
 915 920 925
 Ile Gly Phe Asn Leu Tyr Cys Lys Leu Leu Lys Lys Ala Val Ser Ala
 930 935 940
 Leu Lys Lys His Thr Ser Pro Leu Leu Phe Asn Asp Asp Val Lys Ile
 945 950 955 960
 Glu Phe Pro Tyr Asn Ser Arg Ile Pro Asp Thr Tyr Ile Glu Thr Gly
 965 970 975
 Ser Met Arg Ile Glu Phe Tyr Gln Lys Ile Gly Asn Ala Glu Ser Ser
 980 985 990
 Glu Glu Leu Thr Ala Ile Gln Glu Glu Met Arg Asp Arg Phe Gly Pro
 995 1000 1005
 Leu Pro Gln Glu Ile Cys Trp Leu Phe Ala Leu Ala Glu Ile Arg Leu
 1010 1015 1020
 Phe Ala Leu Gln His Gly Ile Ser Ser Ile Lys Gly Thr Ala Asn Ala
 1025 1030 1035 1040
 Leu Tyr Val Gln Lys Cys Leu Ser Lys Ser Glu Gln Thr Lys Lys Thr
 1045 1050 1055
 Leu Pro Tyr Ala Leu Ser Pro Thr Pro Glu Leu Leu Val Lys Glu Val
 1060 1065 1070
 Ile Glu Ser Ile Glu Arg Gly Phe Leu Ile Asn Ala Ser
 1075 1080 1085

<210>962

<211>182

<212>PRT

<213>Chlamydia pneumoniae

<400>962

Gly Gly His Trp Arg Lys Ser Arg Ser Tyr Ser Thr Pro Thr Lys Arg
 1 5 10 15
 Ser Ile Arg Arg Asp Cys Thr Leu Leu Gln Val Pro Arg Asp Gln Ile
 20 25 30
 Val Ser Arg Leu Thr Ala Thr Leu Asp Glu Arg Lys Gln Gln Asp Lys
 35 40 45
 Arg Leu Asn Glu Leu Glu Asn Ser Leu Ile Gln Thr Lys Leu Asp Lys
 50 55 60
 Leu Ile His Asn Cys His Gln Arg Gln Gly Ile Thr Cys Leu Val His
 65 70 75 80
 His Leu Ala Glu His Glu Asn His Arg Leu Gln Gln Tyr Ala Gln Cys
 85 90 95
 Leu His Gln Arg Ile Pro Glu Lys Leu Ile Ser Leu Trp Thr Thr Glu
 100 105 110
 Lys Asn Gly Lys Tyr Ile Val Leu Ser Arg Val Ser Asp Asp Leu Ile
 115 120 125
 Thr Gln Gly Val His Ala Gln Asp Leu Leu Lys Ala Val Leu Thr Pro
 130 135 140
 Cys Gly Gly Arg Trp Gly Gly Lys Asp Gln Ser Ala Gln Gly Ser Ala
 145 150 155 160

Pro Ala Leu Pro Ala Thr Glu Val Leu Asn Glu Thr Leu Trp Gln Trp
 165 170 175
 Ile Ser Thr Gln Leu Ile
 180
 <210>963
 <211>482
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>963
 Ser Gly Cys Val Ala Arg Leu Ile Ala Lys Thr Glu Gln Leu Ser Gly
 1 5 10 15
 Lys Val Tyr His Pro Asp Asp Ser Gly Ala Ala Phe Arg Val Ile Ala
 20 25 30
 Asp His Val Arg Ser Leu Ser Phe Ala Ile Ala Asp Gly Leu Leu Pro
 35 40 45
 Gly Asn Thr Glu Arg Gly Tyr Val Leu Arg Lys Ile Leu Arg Arg Ser
 50 55 60
 Val Asn Tyr Gly Arg Arg Leu Gly Phe Arg Asn Pro Phe Leu Ala Glu
 65 70 75 80
 Ile Val Pro Ser Leu Ala Asp Ala Met Gly Glu Ala Tyr Pro Glu Leu
 85 90 95
 Lys Asn Ser Leu Ser Gln Ile Gln Lys Val Leu Thr Leu Glu Glu
 100 105 110
 Ser Phe Phe Lys Thr Leu Asp Arg Gly Gly Asn Leu Leu Gln Gln Val
 115 120 125
 Leu Lys Ser Ser Ser Ser Ser Ser Cys Ile Ser Gly Glu Asp Ala Phe
 130 135 140
 Lys Leu Lys Asp Thr Tyr Gly Met Pro Ile Asp Glu Ile Ser Leu Leu
 145 150 155 160
 Ala Lys Asp Tyr Asp Tyr Ser Val Asp Met Asp Thr Phe His Lys Leu
 165 170 175
 Glu Gln Glu Ala Lys Glu Arg Ser Arg Lys Asn Val Val Gln Ser Gln
 180 185 190
 Gly Thr Ser Glu Ser Ile Tyr Asn Glu Leu His Leu Thr Ser Glu Phe
 195 200 205
 Ile Gly Tyr Asp His Leu Ser Cys Asp Thr Phe Ile Glu Ala Ile Ile
 210 215 220
 Ser Lys Asp His Ile Val Ser Ser Leu Gln Glu Lys Gln Glu Gly Ala
 225 230 235 240
 Ile Val Leu Lys Val Ser Pro Phe Tyr Ala Glu Lys Gly Gly Gln Val
 245 250 255
 Gly Asp Ser Gly Glu Ile Phe Cys Ser Glu Gly Thr Phe Ile Val Thr
 260 265 270
 His Thr Thr Ser Pro Lys Ala Gly Leu Ile Val His His Gly Arg Ile
 275 280 285
 Ser Gln Gly Ser Leu Thr Val Glu Ala Ala Val Thr Ala Gln Val Asn
 290 295 300
 Arg Tyr Arg Arg Lys Arg Ile Ala Asn Asn His Thr Ala Cys His Leu
 305 310 315 320
 Leu His Lys Ala Leu Glu Ile Thr Leu Gly Asp His Ile Arg Gln Ala
 325 330 335
 Gly Ser Tyr Val Asp Asp Thr Lys Ile Arg Leu Asp Phe Thr His Pro
 340 345 350
 Gln Ala Ile Ser Pro Glu Asp Leu Leu Cys Ile Glu Thr Leu Val Asn
 355 360 365
 Glu Ser Ile Arg Glu Asn Glu Pro Val Asp Ile Arg Glu Ala Leu Tyr
 370 375 380
 Ser Asp Val Met Asn Ser Ser Glu Ile Lys Gln Phe Phe Gly Asp Lys
 385 390 395 400
 Tyr Ser Asp Val Val Arg Val Val Ser Ala Gly His Ser His Glu Leu
 405 410 415
 Cys Gly Gly Thr His Ala Glu Ala Thr Gly Asp Ile Gly Phe Arg
 420 425 430
 Ile Thr Lys Glu His Ala Val Ala Met Gly Ile Arg Arg Ile Glu Ala

WO 99/27105

PCT/IB98/01890

435 440 445
Val Thr Gly Glu Lys Ala Glu Ala Thr Val His Gln Gln Ser Glu Val
450 455 460
Leu Glu Glu Ile Val Arg Tyr Tyr Lys Ser Leu Gly Ile Arg Leu Ser
465 470 475 480
Pro Gly

<210>964

<211>129

<212>PRT

<213>Chlamydia pneumoniae

<400>964

Ser Arg Arg Ile Tyr Ala Thr Val His Glu Lys Asp Asp Glu Ala Phe
1 5 10 15
Ala Leu Trp Glu Ala Tyr Leu Pro Thr Asp Arg Ile Phe Arg Leu Thr
20 25 30
Asp Lys Asp Asn Phe Trp Ser Met Ala Asn Thr Gly Pro Cys Gly Tyr
35 40 45
Cys Ser Glu Leu Leu Phe Asp Arg Gly Pro Ser Phe Gly Asn Ala Ser
50 55 60
Ser Pro Leu Asp Asp Thr Asp Gly Glu Arg Phe Leu Glu Tyr Trp Asn
65 70 75 80
Leu Val Phe Met Glu Phe Asn Arg Thr Ser Glu Gly Ser Leu Leu Ala
85 90 95
Leu Pro Asn Lys His Val Asp Thr Gly Ala Gly Leu Glu Arg Leu Val
100 105 110
Ser Leu Ile Ala Gly Thr His Thr Val Phe Glu Ala Asp Val Leu Arg
115 120 125
Asp

<210>965

<211>195

<212>PRT

<213>Chlamydia pneumoniae

<400>965

Met Leu Ser Asn Thr Ile Arg Ser Asn Phe Leu Lys Phe Tyr Ala Asn
1 5 10 15
Arg His His Thr Ile Leu Pro Ser Ser Pro Val Phe Pro His Asn Asp
20 25 30
Pro Ser Ile Leu Phe Thr Asn Ala Gly Met Asn Gln Phe Lys Asp Ile
35 40 45
Phe Leu Asn Lys Glu Lys Val Ser Tyr Ser Arg Ala Thr Thr Ser Gln
50 55 60
Lys Cys Ile Arg Ala Gly Gly Lys His Asn Asp Leu Asp Asn Val Gly
65 70 75 80
His Thr Ser Arg His Leu Thr Phe Phe Glu Met Leu Gly Asn Phe Ser
85 90 95
Phe Gly Asp Tyr Phe Lys Ala Glu Ala Ile Ala Phe Ala Trp Glu Val
100 105 110
Ser Leu Ser Val Phe Asn Phe Asn Pro Glu Gly Phe Thr Leu Pro Tyr
115 120 125
Met Lys Lys Thr Met Lys His Leu Leu Phe Gly Lys His Ile Phe Leu
130 135 140
Gln Ile Val Phe Ser Val Leu Gln Thr Lys Thr Thr Ser Gly Ala Trp
145 150 155 160
Gln Thr Gln Ala Pro Val Ala Ile Val Pro Ser Ser Ser Leu Ile Val
165 170 175
Ala Pro Val Leu Glu Thr Pro Leu Leu Pro Leu Thr Ile Leu Met Glu
180 185 190
Ser Val Ser
195
<210>966
<211>692
<212>PRT

<213>Chlamydia pneumoniae

<400>966

Leu Gly Ile Ser Tyr Ser Cys Cys Phe Tyr Ile Glu Gly Leu Gln Gly
 1 5 10 15
 Leu Leu Met Ile Asn Lys Glu Leu Asp Ile Gly Ile Leu Gly Lys Ile
 20 25 30
 Ala Gly Ala Ile Lys Gln Ile Ser Ile Glu Ser Ile Gln Lys Ala Ser
 35 40 45
 Ser Gly His Pro Gly Leu Pro Leu Gly Cys Ala Glu Leu Ala Ala Tyr
 50 55 60
 Leu Tyr Gly Tyr Val Leu Arg Gln Asn Pro Arg Asp Pro His Trp Ile
 65 70 75 80
 Asn Arg Asp Arg Phe Val Leu Ser Ala Gly His Gly Ser Ala Leu Leu
 85 90 95
 Tyr Ser Cys Leu His Leu Ala Gly Phe Asp Val Ser Leu Glu Asp Leu
 100 105 110
 Gln Glu Phe Arg Gln Leu His Ser Arg Thr Pro Gly His Pro Glu Tyr
 115 120 125
 Gly Glu Thr Val Gly Val Glu Ala Thr Thr Gly Pro Leu Gly Gln Gly
 130 135 140
 Leu Gly Asn Ala Val Gly Met Ala Leu Ser Met Lys Met Leu Glu Ser
 145 150 155 160
 Arg Phe Asn Arg Pro Gly His Glu Ile Phe Asn Gly Lys Ile Tyr Cys
 165 170 175
 Leu Ala Gly Asp Gly Cys Phe Met Glu Gly Val Ser His Glu Val Cys
 180 185 190
 Ser Phe Ala Gly Ser Leu Asn Leu Asn Asn Leu Val Val Ile Tyr Asp
 195 200 205
 Tyr Asn Asn Val Val Leu Asp Gly Tyr Leu Asn Glu Ile Ser Val Glu
 210 215 220
 Asp Thr Lys Lys Arg Phe Glu Ala Tyr Gly Trp Glu Tyr Tyr Glu Ile
 225 230 235 240
 Asp Gly Tyr Asp Phe Thr His Ile His Glu Thr Phe Ser Ser Ile Lys
 245 250 255
 Arg Gly Gln Glu Arg Pro Val Leu Val Ile Ala His Thr Ile Ile Gly
 260 265 270
 His Gly Ser Pro Lys Glu Gly Thr Asn Lys Ala His Gly Ser Pro Leu
 275 280 285
 Gly Val Glu Gly Thr His Glu Thr Lys Gln Phe Trp His Leu Pro Glu
 290 295 300
 Glu Lys Phe Phe Val Pro Ala Val Lys Asn Phe Phe Ala His Lys
 305 310 315 320
 Ile Gln Glu Asp Arg Lys Ala Gln Glu Gln Trp Leu Asp Glu Val Arg
 325 330 335
 Val Trp Ser Lys Gln Phe Pro Glu Leu His Glu Glu Phe Val Ala Leu
 340 345 350
 Thr Ser His Lys Leu Pro Lys Asn Leu Glu Ser Leu Val Gln Ser Val
 355 360 365
 Glu Met Pro Asp Ser Ile Ala Gly Arg Ala Ala Ser Asn Lys Leu Ile
 370 375 380
 Gln Val Leu Val Gln His Ile Pro Tyr Leu Ile Gly Gly Ser Ala Asp
 385 390 395 400
 Leu Ser Ser Ser Asp Gly Thr Trp Ile Ala Asn Glu Lys Val Ile His
 405 410 415
 Thr Tyr Asp Phe Ser Gly Arg Asn Ile Lys Tyr Gly Val Arg Glu Phe
 420 425 430
 Gly Met Ala Thr Ile Met Asn Gly Leu Ala Tyr Ser Gln Val Phe Arg
 435 440 445
 Pro Phe Gly Gly Thr Phe Leu Val Phe Ser Asp Tyr Met Arg Asn Ala
 450 455 460
 Ile Arg Leu Ala Ala Leu Ser Lys Leu Pro Val Ile Tyr Gln Phe Thr
 465 470 475 480
 His Asp Ser Ile Phe Val Gly Glu Asp Gly Pro Thr His Gln Pro Val
 485 490 495

Glu Gln Leu Met Ser Leu Arg Ala Ile Pro Gly Leu Tyr Val Ile Arg
 500 505 510
 Pro Ala Asp Ala Asn Glu Val Arg Gly Ala Trp Ile Ala Gly Leu Lys
 515 520 525
 His Thr Gly Pro Thr Val Ile Val Leu Ser Arg Gln Ala Leu Pro Thr
 530 535 540
 Leu Pro Ala Ala His Arg Pro Phe Lys Asp Gly Val Gly Arg Gly Ala
 545 550 555 560
 Tyr Ile Val Leu Lys Glu Ser Gly Glu Lys Pro Asp Tyr Thr Leu Phe
 565 570 575
 Ala Thr Gly Ser Glu Val Ser Leu Ala Leu Ser Val Ala Lys Glu Leu
 580 585 590
 Glu His Leu Asp Lys Gln Val Arg Val Val Ser Phe Pro Cys Trp Glu
 595 600 605
 Leu Phe Glu Ala Gln Asp Val Asp Tyr Lys Gln Ser Ile Val Gly Gly
 610 615 620
 Asp Leu Gly Ile Arg Val Ser Ile Glu Ala Gly Ser Ala Leu Gly Trp
 625 630 635 640
 Tyr Lys Tyr Ile Gly Ser Glu Gly Leu Leu Ser Leu Trp Ile Asp Ser
 645 650 655
 Asp Thr Gln Glu Leu Leu Met Met Tyr Gln Lys Asn Val Ala Leu Leu
 660 665 670
 Gln Ser Lys Ser Phe Arg Gly Phe Ser Leu Asn Ser His Cys Arg Lys
 675 680 685
 Phe Gln Ser Arg
 690
 <210>967
 <211>312
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>967
 Pro Arg Asn Asp Lys Asn Ala Lys Asn Leu Arg Arg Lys His Tyr Lys
 1 5 10 15
 Gly Glu Arg Val Ser Lys His Thr Ser Glu Ser Arg Ile Ala Gln Asp
 20 25 30
 Met Leu Glu Arg Tyr Ser Gly Ser Ser Val Lys Gln Phe Cys Pro Tyr
 35 40 45
 Leu Leu Leu Thr Asn Phe Ser Tyr Tyr Ile Gln Thr Phe Ala Lys Leu
 50 55 60
 His Gly Val Pro Val Phe Glu Gly Ser Met Phe Ser Ala Ala His Ala
 65 70 75 80
 Pro His Leu Lys Thr Ser Ile Leu Asp Phe Lys Leu Gly Ser Pro Gly
 85 90 95
 Ala Ala Leu Thr Ile Asp Leu Cys Ser Phe Leu Pro Asp Leu Lys Ala
 100 105 110
 Ala Leu Met Leu Gly Met Cys Gly Gly Leu Arg Ser His Tyr Gln Val
 115 120 125
 Gly Asp Tyr Phe Val Pro Val Ala Ser Ile Arg Gly Glu Gly Thr Ser
 130 135 140
 Asp Ala Tyr Phe Pro Pro Glu Val Pro Ala Leu Ala Asn Phe Val Val
 145 150 155 160
 Gln Lys Ala Thr Thr Glu Val Leu Glu Asp Lys Lys Ala Asn Tyr His
 165 170 175
 Ile Gly Ile Thr His Thr Thr Asn Ile Arg Phe Trp Glu Phe Asn Lys
 180 185 190
 Lys Phe Arg Lys Lys Leu Tyr Glu Thr Lys Ala Gln Ser Ala Glu Met
 195 200 205
 Glu Cys Ala Thr Leu Phe Ala Ala Gly Tyr Arg Arg Asn Leu Pro Ile
 210 215 220
 Gly Ala Leu Leu Leu Ile Ser Asp Leu Pro Leu Arg Lys Glu Gly Ile
 225 230 235 240
 Lys Thr Lys Ser Ser Gly Asn Phe Ile Phe Asn Thr Tyr Thr Glu Asp
 245 250 255
 His Ile Leu Thr Gly Gln Glu Val Ile Glu Asn Leu Glu Lys Val Met

260 265 270
 Leu Lys Arg Ala Ala Ser Asp His Lys Lys Asp Gln Gln Tyr Arg Gly
 275 280 285
 Leu Pro His Met Glu Val Gly Glu Ala Asp Asp Thr Met Ala Ser Gly
 290 295 300
 Ser Glu Thr Ser Asp Ser Asp Tyr
 305 310

<210>968

<211>190

<212>PRT

<213>Chlamydia pneumoniae

<400>968

Met Val Arg Val Ser Thr Ser Glu Phe Arg Val Gly Leu Arg Ile Glu
 1 5 10 15
 Ile Asp Gly Gln Pro Tyr Leu Ile Leu Gln Asn Asp Phe Val Lys Pro
 20 25 30
 Gly Lys Gly Gln Ala Phe Asn Arg Ile Lys Val Lys Asn Phe Leu Thr
 35 40 45
 Gly Arg Val Ile Glu Arg Thr Tyr Lys Ser Gly Glu Ser Val Glu Thr
 50 55 60
 Ala Asp Ile Val Glu Arg Ser Met Arg Leu Leu Tyr Thr Asp Gln Glu
 65 70 75 80
 Gly Ala Thr Phe Met Asp Asp Glu Thr Phe Glu Gln Glu Val Val Phe
 85 90 95
 Trp Glu Lys Leu Glu Asn Ile Arg Gln Trp Leu Leu Glu Asp Thr Ile
 100 105 110
 Tyr Thr Leu Val Leu Tyr Asn Gly Asp Val Val Ala Val Glu Pro Pro
 115 120 125
 Ile Phe Met Glu Leu Ser Ile Ala Glu Thr Ala Pro Gly Val Arg Gly
 130 135 140
 Asp Thr Ala Ser Gly Arg Val Leu Lys Pro Ala Val Thr Asn Thr Gly
 145 150 155 160
 Ala Lys Ile Met Val Pro Ile Phe Ile Asp Glu Gly Glu Leu Val Lys
 165 170 175
 Val Asp Thr Arg Thr Gly Ser Tyr Glu Ser Arg Val Ser Lys
 180 185 190

<210>969

<211>83

<212>PRT

<213>Chlamydia pneumoniae

<400>969

Glu Lys Tyr Phe Phe Phe Thr Val Arg Asn Met Glu Ala Lys Lys Ile
 1 5 10 15
 Lys Glu Leu Ser Lys Glu Ala Gln Leu Leu Lys Lys Leu Arg Glu Lys
 20 25 30
 Ser Arg Val Leu Asp Glu Lys Asn Lys Arg Lys Ala Trp Val Ala Lys
 35 40 45
 Leu Val Ala Met Pro Glu Ser Ile Arg Glu Ile Glu Lys Glu Glu Arg
 50 55 60
 Val Glu Thr Pro Gln Leu Phe Gln Ala Ile Ala Glu Lys Ile Leu Glu
 65 70 75 80
 Glu Gly Val

<210>970

<211>314

<212>PRT

<213>Chlamydia pneumoniae

<400>970

Asn Phe Ser Leu Asp Ser Asn Thr Val Asp Gln Lys Asn Lys Ser Asn
 1 5 10 15
 Pro Arg Pro Met Gln Glu Lys Pro Arg His Val His Arg Ile Ile His
 20 25 30
 Ile Ser Asp Val His Phe His Val Leu Pro Val Asn Pro Val His Cys
 35 40 45

Phe Asn Lys Arg Leu Lys Gly Leu Leu Arg Lys Val Phe Gly Leu Val
 50 55 60
 His Phe Gln Ala Thr Thr Ile Gly Gln Arg Phe Pro Lys Val Val Arg
 65 70 75 80
 Ser Leu Gly Ala Asp Ser Val Cys Ile Thr Gly Asp Phe Ser Leu Thr
 85 90 95
 Ala Met Asp Gly Glu Phe Leu Leu Ala Lys His Phe Val Glu Thr Leu
 100 105 110
 Ala Lys His Ser Ser Val Tyr Leu Leu Pro Gly Asn His Asp Val Tyr
 115 120 125
 Thr Leu Lys Ser Leu Ala Gln Gln Thr Phe Tyr Thr His Phe Pro Asn
 130 135 140
 Asp Gln Leu Gln Gln Asn Lys Val Ser Phe His Lys Ile Thr Asp His
 145 150 155 160
 Trp Trp Leu Ile Leu Leu Asp Cys Ser Cys Leu Asn Gly Trp Phe Ser
 165 170 175
 Ala Asn Gly Val Val His Leu Ala Gln Ile Ser Ala Ile Glu Thr Phe
 180 185 190
 Leu Leu Ser Leu Ser Pro Glu Glu Asn Val Ile Ile Ala Asn His Tyr
 195 200 205
 Pro Leu Leu Ser Ser Gln Asn Pro Ser His Asp Leu Ile Asn Asn Thr
 210 215 220
 His Leu Gln Asn Val Leu Lys Lys Tyr Pro Lys Val Arg Leu Tyr Leu
 225 230 235 240
 His Gly His Glu His Gln Ala Ala Val Tyr Asn Cys Ala Asp Thr Ser
 245 250 255
 Pro Ser Tyr Ile Leu Asn Ser Gly Ser Ile Ser Leu Pro Thr Asn Ser
 260 265 270
 Arg Phe His Val Ile Asp Leu Tyr Pro Glu Lys Tyr Gln Val His Thr
 275 280 285
 Met Ile Leu Lys Asn Leu Leu Asp Phe Asp Ala Pro Leu Glu Ile Ala
 290 295 300
 Asn Glu Ala Thr Trp Asp Cys Gln Lys Leu
 305 310

<210>971

<211>519

<212>PRT

<213>Chlamydia pneumoniae

<400>971

Met Ser Glu Gln Glu Lys Leu Ser Asn Tyr Asn Ala Asp Lys Lys Leu
 1 5 10 15
 Phe Ser Gly Ile Asp Lys Leu Phe Gln Ile Val Lys Gly Ser Tyr Gly
 20 25 30
 Pro Lys Gln Ser Leu Ser Pro Thr Ser Phe Phe Lys Glu Arg Gly Phe
 35 40 45
 Tyr Ala Ile Ser Gln Thr Glu Leu Ser Asn Ser Tyr Glu Asn Leu Gly
 50 55 60
 Val Asp Phe Ala Lys Ala Met Val Asn Lys Ile His Lys Glu His Ser
 65 70 75 80
 Asp Gly Ala Thr Thr Gly Leu Ile Leu Leu His Ala Ile Leu Gln Glu
 85 90 95
 Ser Tyr Ala Ala Leu Glu Lys Gly Ile Ser Thr His Lys Leu Ile Ala
 100 105 110
 Ser Leu Lys Leu Gln Gly Glu Lys Leu Gln Glu Ala Leu Gln Gln Gln
 115 120 125
 Ser Trp Pro Ile Lys Asp Ala Leu Lys Val Arg Asn Ile Ile Phe Ser
 130 135 140
 Ser Leu His Met Pro Thr Ile Ala Asp His Phe Tyr Asn Ala Phe Ser
 145 150 155 160
 Val Val Gly Pro Glu Gly Leu Ile Ser Ile Thr Lys Glu Arg Glu Asn
 165 170 175
 Asp Lys Thr Ser Met Asp Val Phe Gln Gly Phe Lys Ile Pro Ala Gly
 180 185 190
 Tyr Ala Ser Thr Tyr Phe Val Ser Asp Thr Ala Ser Arg Leu Thr Arg

195 200 205
 Ile Ala His Pro Leu Ile Leu Ile Thr Asp Arg Lys Ile Ser Met Ile
 210 215 220
 His Ser Leu Leu Pro Leu Leu Gln Glu Ile Ser Glu Gln Asn Gln His
 225 230 235 240
 Leu Ile Ile Phe Cys Glu Asp Ile Asp Pro Asp Val Leu Ala Thr Leu
 245 250 255
 Val Val Asn Lys Leu Gln Gly Leu Leu Gln Val Thr Val Val Thr Ile
 260 265 270
 Pro Gln Leu Ser Thr Thr Asn Gln Glu Leu Ala Glu Asp Ile Ala Leu
 275 280 285
 Phe Thr Gly Thr His Ile Cys Pro Cys Gln Glu Ala Ser His Val Leu
 290 295 300
 Ala Pro Glu Met Val Thr Leu Gly Ser Cys Leu Ser Ile Glu Ile Ser
 305 310 315 320
 Glu Ser Gln Thr Thr Leu Ile Gly Gly Leu His Ile Pro Glu Val Leu
 325 330 335
 Thr Leu Lys Thr Arg Gln Leu Ala Glu Glu Ile Arg Thr Thr Ser Cys
 340 345 350
 Leu Glu Thr Lys Lys Arg Leu Ile Lys Ser Thr Asn Arg Leu Gln Ser
 355 360 365
 Ser Val Ala Ile Leu Pro Thr Asp Glu Asp Asn Glu Pro Leu Tyr Thr
 370 375 380
 Leu Ala Leu Lys Ile Met Glu Ser Ala Leu Ser Arg Gly Tyr Val Pro
 385 390 395 400
 Gly Gly Gly Val Ala Leu Phe Tyr Ala Ser Leu Thr Leu Gly Thr Pro
 405 410 415
 Lys Asp Asp Ala Asp Glu Asn Ser Ile Ala Ile Ser Leu Leu Gln Lys
 420 425 430
 Ala Cys Cys Ala Pro Leu Lys Leu Leu Ala Thr Asn Ala Asp Leu Asp
 435 440 445
 Gly Asp Ala Val Ile Ala Lys Leu Ser Ser Leu Gly Thr Thr Ser Leu
 450 455 460
 Gly Ile Ser Val Phe Ser Arg Glu Ile Glu Asp Leu Ile Ala Gly Gly
 465 470 475 480
 Ile Leu Asp Ser Leu Ala Thr Thr Ser Thr Ile Leu Ala Gln Ala Leu
 485 490 495
 Asp Thr Ala Ile Leu Val Leu Ser Ser Lys Ile Leu Ile Leu Glu Asn
 500 505 510
 Gln Tyr Glu Ile Ser Thr Leu
 515
 <210>972
 <211>447
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>972
 Met Arg Ala Met Leu Leu Glu Asp Trp Val Ser Leu Met Leu Ser Asp
 1 5 10 15
 Val Ser Cys Pro Lys Cys Asp Lys Lys Ile Thr Gly Phe Ala Ile Asp
 20 25 30
 Ser Gln Lys Val Gln Pro Gly Asp Leu Phe Phe Ala Leu Pro Gly Asn
 35 40 45
 Ala Thr Asp Gly His Gln Phe Leu Lys His Ala Ala Thr Ala Gly Ala
 50 55 60
 Val Ala Ala Val Val Ser His Asp Tyr Gln Gly Asp Ser Phe Gly Leu
 65 70 75 80
 Glu Leu Ile Arg Val Asp Asp Thr Lys Ser Ala Leu Gln Glu Ala Gly
 85 90 95
 Ser Asn Gln Cys Asn Leu Phe Gln Gly Thr Leu Val Gly Ile Thr Gly
 100 105 110
 Ser Val Gly Lys Thr Thr Thr Lys Glu Phe Ser Lys Thr Ile Leu Ser
 115 120 125
 Ser Ile Tyr Lys Thr His Ala Ser Pro Lys Ser Tyr Asn Ser Gln Leu
 130 135 140

Thr Val Pro Leu Ser Leu Leu Met Ala Glu Gly Asp Glu Asp Val Met
 145 150 155 160
 Ile Leu Glu Met Gly Val Ser Glu Pro Gly Asn Met Gln Asp Leu Leu
 165 170 175
 Arg Ile Val Gln Pro Glu Ile Ala Val Ile Thr His Ile Asn Asp Gln
 180 185 190
 His Ala Met His Phe Pro Gln Gly Ile Gln Glu Ile Leu Lys Glu Lys
 195 200 205
 Ser Tyr Ile Leu Gln Lys Ser Lys Leu Gln Leu Leu Pro Lys Asp Ser
 210 215 220
 Pro Tyr Tyr Leu Asp Leu Arg Ser Cys Ser Pro Thr Ala Glu Lys Phe
 225 230 235 240
 Ser Phe Ser Phe Asn Asp Pro Leu Ala Asp Phe Cys Tyr Lys Ala Ile
 245 250 255
 Ser Gly Asp Ser Val Val Ile Gln Thr Pro Glu Glu Asn Tyr Cys Leu
 260 265 270
 Pro Ile Ala Phe Ser Tyr Lys Pro Ala Tyr Thr Asn Leu Leu Ile Ala
 275 280 285
 Val Ala Leu Ser Trp Ile Leu Glu Val Pro Glu Glu Gly Val Ile Arg
 290 295 300
 Ser Leu Pro Glu Leu Lys Leu Pro Pro Met Arg Phe Glu His Ser Met
 305 310 315 320
 Arg Asn Gly Met Gln Val Ile Asn Asp Ala Tyr Asn Ala Cys Pro Glu
 325 330 335
 Ala Met Ile Ala Ala Leu Asp Ala Leu Pro Leu Pro Ser Asp Gly Gly
 340 345 350
 Lys Ile Ile Leu Ile Leu Gly His Met Ala Glu Leu Gly Arg Tyr Ser
 355 360 365
 Glu Glu Gly His Ala Leu Val Ala Glu Lys Ala Ala Ser Arg Gly Asp
 370 375 380
 Met Ile Phe Phe Ile Gly Glu Lys Trp Ile Pro Val Gln Ser Val Leu
 385 390 395 400
 Lys Ser Tyr Ser Cys Glu Val Ser Phe Phe Ser Ser Ala Gln Asp Val
 405 410 415
 Lys Asp Ile Leu Lys Gln Val Ala Arg Tyr Gly Asp Val Ile Leu Leu
 420 425 430
 Lys Gly Ser Arg Ala Leu Ala Leu Glu Ser Leu Leu Ala Cys Phe
 435 440 445

<210>973

<211>349

<212>PRT

<213>Chlamydia pneumoniae

<400>973

Met Ile Pro Leu Ile Pro Met Phe Leu Lys Gln Ser Leu Phe Phe Ser
 1 5 10 15
 Leu Ala Leu Thr Gly Met Thr Thr Leu Val Leu Thr Val Ser Leu Gly
 20 25 30
 Val Pro Val Met Lys Trp Leu Lys Arg Lys Asn Tyr Arg Asp Tyr Ile
 35 40 45
 His Lys Glu Tyr Cys Glu Lys Leu Glu Met Leu His Lys Asp Lys Ala
 50 55 60
 Glu Val Pro Thr Gly Gly Val Leu Leu Phe Ile Ser Leu Ile Ala
 65 70 75 80
 Ser Leu Leu Val Trp Leu Pro Trp Gly Lys Phe Ser Thr Trp Phe Phe
 85 90 95
 Ile Ile Leu Leu Thr Cys Tyr Ala Gly Leu Gly Trp Tyr Asp Asp Arg
 100 105 110
 Ile Lys Ile Lys Arg Lys Gln Gly His Gly Leu Lys Ala Lys His Lys
 115 120 125
 Phe Met Val Gln Ile Ala Ile Ala Ala Phe Thr Leu Ile Ala Leu Pro
 130 135 140
 Tyr Ile Tyr Gly Ser Thr Glu Pro Leu Trp Thr Leu Lys Ile Pro Phe
 145 150 155 160
 Met Glu Gly Met Leu Ser Leu Pro Phe Trp Leu Gly Lys Val Phe Cys

165 170 175
 Leu Gly Leu Ala Leu Val Ala Ile Ile Gly Thr Ser Asn Ala Val Asn
 180 185 190
 Leu Thr Asp Gly Leu Asp Gly Leu Ala Ala Gly Thr Met Ser Phe Ala
 195 200 205
 Ala Leu Gly Phe Ile Phe Val Ala Leu Arg Ser Ser Thr Ile Pro Ile
 210 215 220
 Ala Gln Asp Val Ala Tyr Val Leu Ala Ala Leu Val Gly Ala Cys Ile
 225 230 235 240
 Gly Phe Leu Trp Tyr Asn Gly Phe Pro Ala Gln Leu Phe Met Gly Asp
 245 250 255
 Thr Gly Ser Leu Leu Gly Gly Leu Leu Gly Ser Cys Ala Val Met
 260 265 270
 Leu Arg Ala Glu Cys Ile Leu Val Ile Gly Gly Val Phe Val Ala
 275 280 285
 Glu Ala Gly Ser Val Ile Leu Gln Val Leu Ser Cys Arg Leu Arg Lys
 290 295 300
 Lys Arg Leu Phe Leu Cys Ser Pro Leu His His His Tyr Glu Tyr Gln
 305 310 315 320
 Gly Leu Pro Glu Thr Lys Ile Val Met Arg Phe Trp Ile Phe Ser Phe
 325 330 335
 Val Cys Ala Gly Leu Gly Ile Ala Ala Val Leu Trp Arg
 340 345
 <210>974
 <211>419
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>974
 Met Arg Arg Ser Arg Tyr Ser Gly Cys Leu Met Glu Ile Asp Met Cys
 1 5 10 15
 Gln Arg Ile Leu Ile Leu Gly Thr Gly Ile Thr Gly Lys Ser Val Ala
 20 25 30
 Arg Phe Leu Tyr Gln Gln Gly His Tyr Leu Ile Gly Ala Asp Asn Ser
 35 40 45
 Leu Glu Ser Leu Ile Ser Val Asp His Leu His Asp Arg Leu Leu Met
 50 55 60
 Gly Ala Ser Glu Phe Pro Glu Asn Ile Asp Leu Val Ile Arg Ser Pro
 65 70 75 80
 Gly Ile Lys Pro Tyr His Pro Trp Val Glu Gln Ala Val Ser Leu Lys
 85 90 95
 Ile Pro Val Val Thr Asp Ile Gln Val Ala Leu Lys Thr Pro Glu Phe
 100 105 110
 Gln Arg Tyr Pro Ser Phe Gly Ile Thr Gly Ser Asn Gly Lys Thr Thr
 115 120 125
 Thr Thr Leu Phe Leu Thr His Leu Leu Asn Thr Leu Gly Ile Pro Ala
 130 135 140
 Ile Ala Met Gly Asn Ile Gly Leu Pro Ile Leu Asp His Met Gly Gln
 145 150 155 160
 Pro Gly Val Arg Val Val Glu Ile Ser Ser Phe Gln Leu Ala Thr Gln
 165 170 175
 Glu Glu His Ile Pro Ala Leu Ser Gly Ser Val Phe Leu Asn Phe Ser
 180 185 190
 Arg Asn His Leu Asp Tyr His Arg Asn Leu Asp Ala Tyr Phe Asp Ala
 195 200 205
 Lys Leu Arg Ile Gln Lys Cys Leu Arg Gln Asp Lys Thr Phe Trp Val
 210 215 220
 Trp Glu Glu Cys Ser Leu Gly Asn Ser Tyr Gln Ile Tyr Ser Glu Glu
 225 230 235 240
 Ile Glu Glu Ile Leu Asp Lys Gly Asp Ala Leu Lys Pro Ile Tyr Leu
 245 250 255
 His Asp Arg Asp Asn Tyr Cys Ala Ala Tyr Ala Leu Ala Asn Glu Val
 260 265 270
 Gly Trp Val Ser Pro Glu Gly Phe Leu Lys Ala Ile Arg Thr Phe Glu
 275 280 285

WO 99/27105

PCT/IB98/01890

Lys Pro Ala His Arg Leu Glu Tyr Leu Gly Lys Lys Asp Gly Val His
 290 295 300
 Tyr Ile Asn Asp Ser Lys Ala Thr Thr Val Thr Ala Val Glu Lys Ala
 305 310 315 320
 Leu Met Ala Val Gly Lys Asp Val Ile Val Ile Leu Gly Gly Lys Asp
 325 330 335
 Lys Gly Gly Asp Phe Pro Ala Leu Ala Ser Val Leu Ser Gln Thr Thr
 340 345 350
 Lys His Val Ile Ala Met Gly Glu Cys Arg Gln Thr Ile Ala Asp Ala
 355 360 365
 Leu Ser Glu Lys Ile Pro Leu Thr Leu Ser Lys Asp Leu Gln Glu Ala
 370 375 380
 Val Ser Ile Ala Gln Thr Ile Ala Gln Glu Gly Asp Thr Val Leu Leu
 385 390 395 400
 Ser Pro Gly Cys Ala Xaa Leu Ile Ser Phe Lys Val Leu Lys Asn Ala
 405 410 415
 Xaa Leu Leu

<210>975

<211>252

<212>PRT

<213>Chlamydia pneumoniae

<400>975

Arg Thr Arg Xaa Tyr Phe Lys Leu Leu Ile Arg Arg Asn Ala Gly Ser
 1 5 10 15
 Glu Val Asn Met Asn Arg Arg Asp Met Val Ile Thr Ala Val Val Val
 20 25 30
 Asn Ala Ile Leu Leu Val Ala Leu Phe Val Thr Ser Lys Arg Ile Gly
 35 40 45
 Val Lys Asp Tyr Asp Glu Gly Phe Arg Asn Phe Ala Ser Ser Lys Val
 50 55 60
 Thr Gln Ala Val Val Ser Glu Glu Lys Val Ile Glu Lys Pro Val Val
 65 70 75 80
 Ala Glu Val Pro Ser Arg Pro Ile Ala Lys Glu Thr Leu Ala Ala Gln
 85 90 95
 Phe Ile Glu Ser Lys Pro Val Ile Val Thr Thr Pro Pro Val Pro Val
 100 105 110
 Val Ser Glu Thr Pro Glu Val Pro Thr Val Ala Val Pro Gln Pro
 115 120 125
 Val Arg Glu Thr Val Lys Glu Glu Gln Ala Pro Tyr Ala Thr Val Val
 130 135 140
 Val Lys Lys Gly Asp Phe Leu Glu Arg Ile Ala Arg Ala Asn His Thr
 145 150 155 160
 Thr Val Ala Lys Leu Met Gln Ile Asn Asp Leu Thr Thr Thr Gln Leu
 165 170 175
 Lys Ile Gly Gln Val Ile Lys Val Pro Thr Ser Gln Asp Val Ser Asn
 180 185 190
 Glu Lys Thr Pro Gln Thr Gln Thr Ala Asn Pro Glu Asn Tyr Tyr Ile
 195 200 205
 Val Gln Glu Gly Asp Ser Pro Trp Thr Ile Ala Leu Arg Asn His Ile
 210 215 220
 Arg Leu Asp Asp Leu Leu Lys Met Asn Asp Leu Asp Glu Tyr Lys Ala
 225 230 235 240
 Arg Arg Leu Lys Pro Gly Asp Gln Leu Arg Ile Arg
 245 250

<210>976

<211>385

<212>PRT

<213>Chlamydia pneumoniae

<400>976

Met Lys Trp Phe Val Ile Ser Cys Leu Leu Gly Ile Phe Ser Leu Gly
 1 5 10 15
 Leu Ile Met Val Phe Glu Thr Ser Ser Ala Glu Val Leu Asp Arg Ser
 20 25 30

Leu Glu Cys Ser Thr His Lys Ala Leu Ile Arg Gln Val Thr Tyr Leu
 35 40 45
 Ile Leu Gly Leu Gly Val Ala Ser Leu Leu Tyr Met Met Glu Trp Arg
 50 55 60
 Asp Phe Leu Lys Ile Ser Pro Val Leu Leu Ser Gly Ala Ala Leu Ala
 65 70 75 80
 Leu Ile Cys Val Phe Ile Pro Gly Leu Gly Ile Cys Arg Asn Gly Ala
 85 90 95
 Arg Arg Trp Leu Gly Phe Gly Gln Leu Thr Ile Gln Pro Ser Glu Phe
 100 105 110
 Val Lys Tyr Leu Val Pro Ile Val Ala Leu Tyr Phe Leu Thr Phe Ser
 115 120 125
 Ser Leu Tyr Gln Lys Gln Leu Lys Met Phe Leu Lys Leu Thr Ala Ile
 130 135 140
 Leu Phe Ile Pro Ile Leu Leu Ile Ala Ile Glu Pro Asp Asn Gly Ser
 145 150 155 160
 Ala Ala Val Ile Ser Ala Ser Leu Ile Pro Val Phe Ile Met Thr Ser
 165 170 175
 Val Arg Leu Arg Tyr Trp Leu Leu Pro Leu Leu Cys Val Leu Ile Ala
 180 185 190
 Gly Gly Ala Leu Ala Tyr Arg Met Pro Tyr Val Arg Tyr Arg Leu Asn
 195 200 205
 Val Tyr Leu His Pro Glu Leu Asp Ile Lys Gly Arg Gly His Gln Pro
 210 215 220
 Tyr Gln Ala Lys Ile Ala Ala Gly Ser Gly Lys Leu Leu Gly Lys Gly
 225 230 235 240
 Pro Gly Ala Ser Leu Gln Lys Leu Thr Tyr Leu Pro Glu Ala Gln Asn
 245 250 255
 Asp Tyr Ile Ala Ala Ile Tyr Ala Glu Glu Phe Gly Phe Leu Gly Met
 260 265 270
 Leu Val Leu Ile Leu Leu Tyr Met Cys Phe Val Tyr Gly Gly Tyr Ala
 275 280 285
 Ile Ala Ile Lys Ala Ser Ser Leu Glu Gly Ala Ala Leu Ala Met Val
 290 295 300
 Ile Thr Leu Ile Ile Ser Met Gln Ala Phe Met Asn Leu Gly Val Val
 305 310 315 320
 Ser Gly Leu Leu Pro Ser Lys Gly Val Asn Leu Pro Phe Phe Ser Gln
 325 330 335
 Gly Gly Ser Ser Leu Ile Ala Asn Met Cys Gly Val Thr Leu Leu Leu
 340 345 350
 Lys Val Tyr Asp Glu Glu Asn Ser Lys Ser Ser Leu Gly Cys Arg Arg
 355 360 365
 Phe Arg Arg Pro His Cys Pro Ser Ser Leu Gly Lys Gly Ser Phe Phe
 370 375 380

Ser

385

<210>977

<211>357

<212>PRT

<213>Chlamydia pneumoniae

<400>977

Met Met Lys Lys Ile Arg Lys Val Ala Leu Ala Val Gly Gly Ser Gly
 1 5 10 15
 Gly His Ile Val Pro Ala Leu Ser Val Lys Glu Ala Phe Ser Arg Glu
 20 25 30
 Gly Ile Asp Val Leu Leu Leu Gly Lys Gly Leu Lys Asn His Pro Ser
 35 40 45
 Leu Gln Gln Gly Ile Ser Tyr Arg Glu Ile Pro Ser Gly Leu Pro Thr
 50 55 60
 Val Leu Asn Pro Ile Lys Ile Met Ser Arg Thr Leu Ser Leu Cys Ser
 65 70 75 80
 Gly Tyr Leu Lys Ala Arg Lys Glu Leu Lys Ile Phe Asp Pro Asp Leu
 85 90 95
 Val Ile Gly Phe Gly Ser Tyr His Ser Leu Pro Val Leu Leu Ala Gly

100 105 110
 Leu Ser His Lys Ile Pro Leu Phe Leu His Glu Gln Asn Leu Val Pro
 115 120 125
 Gly Lys Val Asn Gln Leu Phe Ser Arg Tyr Ala Arg Gly Ile Gly Val
 130 135 140
 Asn Phe Ser Pro Val Thr Lys His Phe Arg Cys Pro Ala Glu Glu Val
 145 150 155 160
 Phe Leu Pro Lys Arg Ser Phe Ser Leu Gly Ser Pro Met Met Lys Arg
 165 170 175
 Cys Thr Asn His Thr Pro Thr Ile Cys Val Val Gly Gly Ser Gln Gly
 180 185 190
 Ala Gln Ile Leu Asn Thr Cys Val Pro Gln Ala Leu Val Lys Leu Val
 195 200 205
 Asn Lys Tyr Pro Asn Met Tyr Val His His Ile Val Gly Pro Lys Ser
 210 215 220
 Asp Val Met Lys Val Gln His Val Tyr Asn Arg Gly Glu Val Leu Cys
 225 230 235 240
 Cys Val Lys Pro Phe Glu Glu Gln Leu Leu Asp Val Leu Leu Ala Ala
 245 250 255
 Asp Leu Val Ile Ser Arg Ala Gly Ala Thr Ile Leu Glu Glu Ile Leu
 260 265 270
 Trp Ala Lys Val Pro Gly Ile Leu Ile Pro Tyr Pro Gly Ala Tyr Gly
 275 280 285
 His Gln Glu Val Asn Ala Lys Phe Phe Val Asp Val Leu Glu Gly Gly
 290 295 300
 Thr Met Ile Leu Glu Lys Glu Leu Thr Glu Lys Leu Leu Val Glu Lys
 305 310 315 320
 Val Thr Phe Ala Leu Asp Ser His Asn Arg Glu Lys Gln Arg Asn Ser
 325 330 335
 Leu Ala Ala Tyr Ser Gln Gln Arg Ser Thr Lys Thr Phe His Ala Phe
 340 345 350
 Ile Cys Glu Cys Leu
 355

<210>978

<211>812

<212>PRT

<213>Chlamydia pneumoniae

<400>978

Val His Tyr Met Lys Gly Thr Pro Gln Tyr His Phe Ile Gly Ile Gly
 1 5 10 15
 Gly Ile Gly Met Ser Ala Leu Ala His Ile Leu Leu Asp Arg Gly Tyr
 20 25 30
 Glu Val Ser Gly Ser Asp Leu Tyr Glu Ser Tyr Thr Ile Glu Ser Leu
 35 40 45
 Lys Ala Lys Gly Ala Arg Cys Phe Ser Gly His Asp Ser Ser His Val
 50 55 60
 Pro His Asp Ala Val Val Tyr Ser Ser Ser Ile Ala Pro Asp Asn
 65 70 75 80
 Val Glu Tyr Leu Thr Ala Ile Gln Arg Ser Ser Arg Leu Leu His Arg
 85 90 95
 Ala Glu Leu Leu Ser Gln Leu Met Glu Gly Tyr Glu Ser Ile Leu Val
 100 105 110
 Ser Gly Ser His Gly Lys Thr Gly Thr Ser Ser Leu Ile Arg Ala Ile
 115 120 125
 Phe Gln Glu Ala Gln Lys Asp Pro Ser Tyr Ala Ile Gly Gly Leu Ala
 130 135 140
 Ala Asn Cys Leu Asn Gly Tyr Ser Gly Ser Ser Lys Ile Phe Val Ala
 145 150 155 160
 Glu Ala Asp Glu Ser Asp Gly Ser Leu Lys His Tyr Thr Pro Arg Ala
 165 170 175
 Val Val Ile Thr Asn Ile Asp Asn Glu His Leu Asn Asn Tyr Ala Gly
 180 185 190
 Asn Leu Asp Asn Leu Val Gln Val Ile Gln Asp Phe Ser Arg Lys Val
 195 200 205

Thr Asp Leu Asn Lys Val Phe Tyr Asn Gly Asp Cys Pro Ile Leu Lys
 210 215 220
 Gly Asn Val Gln Gly Ile Ser Tyr Gly Tyr Ser Pro Glu Cys Gln Leu
 225 230 235 240
 His Ile Val Ser Tyr Asn Gln Lys Ala Trp Gln Ser His Phe Ser Phe
 245 250 255
 Thr Phe Leu Gly Gln Glu Tyr Gln Asp Ile Glu Leu Asn Leu Pro Gly
 260 265 270
 Gln His Asn Ala Ala Asn Ala Ala Ala Cys Gly Val Ala Leu Thr
 275 280 285
 Phe Gly Ile Asp Ile Asn Ile Ile Arg Lys Ala Leu Lys Lys Phe Ser
 290 295 300
 Gly Val His Arg Arg Leu Glu Arg Lys Asn Ile Ser Glu Ser Phe Leu
 305 310 315 320
 Phe Leu Glu Asp Tyr Ala His His Pro Val Glu Val Ala His Thr Leu
 325 330 335
 Arg Ser Val Arg Asp Ala Val Gly Leu Arg Arg Val Ile Ala Ile Phe
 340 345 350
 Gln Pro His Arg Phe Ser Arg Leu Glu Glu Cys Leu Gln Thr Phe Pro
 355 360 365
 Lys Ala Phe Gln Glu Ala Asp Glu Val Ile Leu Thr Asp Val Tyr Ser
 370 375 380
 Ala Gly Glu Ser Pro Arg Glu Ser Ile Ile Leu Ser Asp Leu Ala Glu
 385 390 395 400
 Gln Ile Arg Lys Ser Ser Tyr Val His Cys Cys Tyr Val Pro His Gly
 405 410 415
 Asp Ile Val Asp Tyr Leu Arg Asn Tyr Ile Arg Ile His Asp Val Cys
 420 425 430
 Val Ser Leu Gly Ala Gly Asn Ile Tyr Thr Ile Gly Glu Ala Leu Lys
 435 440 445
 Asp Phe Asn Pro Lys Lys Leu Ser Ile Gly Leu Val Cys Gly Gly Lys
 450 455 460
 Ser Cys Glu His Asp Ile Ser Leu Leu Ser Ala Gln His Val Ser Lys
 465 470 475 480
 Tyr Ile Ser Pro Glu Phe Tyr Asp Val Ser Tyr Phe Ile Ile Asn Arg
 485 490 495
 Gln Gly Leu Trp Arg Thr Gly Lys Asp Phe Pro His Leu Ile Glu Glu
 500 505 510
 Thr Gln Gly Asp Ser Pro Leu Ser Ser Glu Ile Ala Ser Ala Leu Ala
 515 520 525
 Lys Val Asp Cys Leu Phe Pro Val Leu His Gly Pro Phe Gly Glu Asp
 530 535 540
 Gly Thr Ile Gln Gly Phe Phe Glu Ile Leu Gly Lys Pro Tyr Ala Gly
 545 550 555 560
 Pro Ser Leu Ser Leu Ala Ala Thr Ala Met Asp Lys Leu Leu Thr Lys
 565 570 575
 Arg Ile Ala Ser Ala Val Gly Val Pro Val Val Pro Tyr Gln Pro Leu
 580 585 590
 Asn Leu Cys Phe Trp Lys Arg Asn Pro Glu Leu Cys Ile Gln Asn Leu
 595 600 605
 Ile Glu Thr Phe Ser Phe Pro Met Ile Val Lys Thr Ala His Leu Gly
 610 615 620
 Ser Ser Ile Gly Ile Phe Leu Val Arg Asp Lys Glu Glu Leu Gln Glu
 625 630 635 640
 Lys Ile Ser Glu Ala Phe Leu Tyr Asp Thr Asp Val Phe Val Glu Glu
 645 650 655
 Ser Arg Leu Gly Ser Arg Glu Ile Glu Val Ser Cys Ile Gly His Ser
 660 665 670
 Ser Ser Trp Tyr Cys Met Ala Gly Pro Asn Glu Arg Cys Gly Ala Ser
 675 680 685
 Gly Phe Ile Asp Tyr Gln Glu Lys Tyr Gly Phe Asp Gly Ile Asp Cys
 690 695 700
 Ala Lys Ile Ser Phe Asp Leu Gln Leu Ser Gln Glu Ser Leu Asp Cys
 705 710 715 720

WO 99/27105

PCT/IB98/01890

Val Arg Glu Leu Ala Glu Arg Val Tyr Arg Ala Met Gln Gly Lys Gly
 725 730 735
 Ser Ala Arg Ile Asp Phe Phe Leu Asp Glu Glu Gly Asn Tyr Trp Leu
 740 745 750
 Ser Glu Val Asn Pro Ile Pro Gly Met Thr Ala Ala Ser Pro Phe Leu
 755 760 765
 Gln Ala Phe Val His Ala Gly Trp Thr Gln Glu Gln Ile Val Asp His
 770 775 780
 Phe Ile Ile Asp Ala Leu His Lys Phe Asp Lys Gln Gln Thr Ile Glu
 785 790 795 800
 Gln Ala Phe Thr Lys Glu Gln Asp Leu Val Lys Arg
 805 810

<210>979

<211>192

<212>PRT

<213>Chlamydia pneumoniae

<400>979

Leu Val Asn Asp Ser Gln Leu Ser Arg Glu Ala Ser Ala Phe Arg Leu
 1 5 10 15
 Asp Ile Asp Phe Phe Ile Leu Asn Ile Tyr Pro Phe Phe Arg Asn Phe
 20 25 30
 Lys Asn Ile Glu Leu Cys Phe Phe Leu Ser Ile Ser Gln Phe Asn Leu
 35 40 45
 Asp Phe Met Glu Glu Phe Val Ala Tyr Ile Val Lys Asn Leu Val Thr
 50 55 60
 Asn Pro Glu Ala Val Glu Ile Arg Ser Ile Glu Asp Glu Asp Asn Glu
 65 70 75 80
 Ser Ile Lys Leu Glu Ile Arg Val Ala Ala Glu Asp Ile Gly Lys Ile
 85 90 95
 Ile Gly Arg Arg Gly Asn Thr Ile His Ala Leu Arg Thr Ile Leu Arg
 100 105 110
 Arg Val Cys Ser Arg Leu Lys Lys Lys Val Gln Ile Asp Leu Val Gln
 115 120 125
 Pro Glu Asn Gly Thr Asp Val Ile Ala Asp Gln Asp Tyr Ile Cys Asp
 130 135 140
 Asn Asp Ser Ser Asn Ser Thr Glu Asp Thr Phe Gly Glu Ser Asp Thr
 145 150 155 160
 Cys Cys Ser Gly His Cys His Tyr Asp Glu Asp Leu Asn Gln Glu Glu
 165 170 175
 Gln Glu Glu Gly Asn Met His His Ser Cys Glu Cys Ser Asn His His
 180 185 190

<210>980

<211>120

<212>PRT

<213>Chlamydia pneumoniae

<400>980

Lys Phe Leu Ile Ile Lys Ser Ser Met Thr Ala Val Leu Ile Leu Thr
 1 5 10 15
 Ser Phe Pro Ser Glu Glu Ser Ala Arg Ser Leu Ala Arg His Leu Ile
 20 25 30
 Thr Glu Arg Leu Ala Ser Cys Val His Val Phe Pro Lys Gly Thr Ser
 35 40 45
 Thr Tyr Leu Trp Glu Gly Lys Leu Cys Glu Ser Glu Glu His His Ile
 50 55 60
 Gln Ile Lys Ser Ile Asp Ile Arg Phe Ser Glu Ile Cys Leu Ala Ile
 65 70 75 80
 Gln Glu Phe Ser Gly Tyr Glu Val Pro Glu Val Leu Leu Phe Pro Ile
 85 90 95
 Glu Asn Gly Asp Pro Arg Tyr Leu Asn Trp Leu Thr Ile Leu Ser Tyr
 100 105 110
 Pro Glu Lys Pro Pro Leu Ser Asp
 115 120

<210>981

<211>213

<212>PRT

<213>Chlamydia pneumoniae

<400>981

Ile Leu Ala Ile Leu Phe Met Ile Ile Ile Lys Asn Asn Glu Leu Met
 1 5 10 15
 Ile Arg Arg Phe Phe Lys Thr Leu Phe Pro Pro Gly Pro Gln Tyr Ser
 20 25 30
 Leu Cys Tyr Ala Ser Ile Leu Ile Val Leu Ser Ser Leu Val Cys Val
 35 40 45
 Pro Thr Phe Cys Trp Leu Phe Leu Pro Glu Leu Ser Leu Ser Lys Phe
 50 55 60
 Asn Pro Ser Pro Ile Arg Asn Leu Phe Leu Val Ser Ser Thr Leu Ser
 65 70 75 80
 Lys Val Pro Pro Thr Ala Ile Ala Glu His Leu Arg Leu Ser Ala Asp
 85 90 95
 Ala Pro Thr Tyr Leu His Glu Phe Ser Ile Lys Glu Ala Glu Ser Ser
 100 105 110
 Leu His Ala Leu Gly Ile Phe Ser Ser Leu Val Ile Glu Lys Ser Pro
 115 120 125
 Asp Asn Lys Gly Ile Thr Ile Phe Tyr Thr Leu Gln Thr Pro Ile Ala
 130 135 140
 Tyr Val Gly Asn Arg Ser Asn Thr Leu Cys Asn Leu Glu Gly Ser Cys
 145 150 155 160
 Phe Leu Gly Gln Pro Tyr Phe Pro Ser Leu Asn Leu Pro Gln Ile Phe
 165 170 175
 Phe Ser Gln Glu Asp Leu Lys Met Gln Lys Leu Pro Lys Glu Lys Met
 180 185 190
 Leu Phe Thr Lys Ile Leu Leu Lys Glu Leu Ala Met Glu Ser Pro Lys
 195 200 205
 Ile Ile Asp Leu Ser
 210

<210>982

<211>107

<212>PRT

<213>Chlamydia pneumoniae

<400>982

Leu Glu Arg Leu Leu Met Asn Leu Ser Ala Lys Glu Tyr Gly Asp Ile
 1 5 10 15
 Ile Val Ile Tyr Leu Gln Gly Ser Leu Asp Ala Val Ser Val Pro Ser
 20 25 30
 Val Gln Glu Tyr Leu Glu Gln Phe Ile Gln Lys Lys His Leu Lys Ile
 35 40 45
 Ala Leu Asn Phe Thr Asp Val Ser Tyr Ile Ser Ser Ala Gly Ile Arg
 50 55 60
 Leu Leu Leu Ser Asn Phe Lys Leu Val Gln Ser Leu Gly Gly Lys Met
 65 70 75 80
 Cys Leu Cys Cys Val Lys Glu Ser Val Thr Glu Val Met Arg Ile Ala
 85 90 95
 Arg Phe Arg Gln Met Ile Leu Leu Cys Gln Val
 100 105

<210>983

<211>342

<212>PRT

<213>Chlamydia pneumoniae

<400>983

Met Leu Pro Phe Glu Phe Glu Phe Asn Thr Thr Ser Ser Pro Glu Cys
 1 5 10 15
 Asp Val Cys Leu Asp Pro Gln Lys Leu Phe Val Lys Leu Phe Lys Arg
 20 25 30
 Thr Ile Val Leu Leu Ser Gly Pro Thr Gly Ser Gly Lys Thr Asp Val
 35 40 45
 Ser Leu Ala Leu Ala Pro Met Ile Asp Gly Glu Ile Val Ser Val Asp
 50 55 60
 Ser Met Gln Val Tyr Gln Gly Met Asp Ile Gly Thr Ala Lys Val Ser

65 70 75 80
 Leu Lys Ala Arg Gln Glu Ile Pro His His Leu Ile Asp Ile Arg His
 85 90 95
 Val Gln Glu Pro Phe Asn Val Val Asp Phe Tyr Tyr Glu Ala Ile Gln
 100 105 110
 Ala Cys Gln Asn Ile Leu Ser Arg Asn Lys Val Pro Ile Leu Val Gly
 115 120 125
 Gly Ser Gly Phe Tyr Phe His Ala Phe Leu Ser Gly Pro Pro Lys Gly
 130 135 140
 Pro Ala Ala Asp Pro Gln Ile Arg Glu Gln Leu Glu Ala Ile Ala Glu
 145 150 155 160
 Glu His Gly Val Ser Ala Leu Tyr Glu Asp Leu Leu Leu Lys Asp Pro
 165 170 175
 Glu Tyr Ala Gln Thr Ile Thr Lys Asn Asp Lys Asn Lys Ile Ile Arg
 180 185 190
 Gly Leu Glu Ile Ile Gln Leu Thr Gly Lys Lys Val Ser Asp His Glu
 195 200 205
 Trp Asp Ile Val Pro Lys Ala Ser Arg Glu Tyr Cys Cys Arg Ala Trp
 210 215 220
 Phe Leu Ser Pro Glu Thr Glu Phe Leu Lys Asn Asn Ile Gln Met Arg
 225 230 235 240
 Cys Glu Ala Met Leu Gln Glu Gly Leu Leu Glu Glu Val Arg Gly Leu
 245 250 255
 Leu Asn Gln Gly Ile Arg Glu Asn Pro Ser Ala Phe Lys Ala Ile Gly
 260 265 270
 Tyr Arg Glu Trp Ile Glu Phe Leu Asp Asn Gly Glu Lys Leu Glu Glu
 275 280 285
 Tyr Glu Glu Thr Lys Arg Lys Phe Val Ser Asn Ser Trp His Tyr Thr
 290 295 300
 Lys Lys Gln Lys Thr Trp Phe Lys Arg Tyr Ser Ile Phe Arg Glu Leu
 305 310 315 320
 Pro Thr Leu Gly Leu Ser Ser Asp Ala Ile Ala Gln Lys Ile Ala Lys
 325 330 335
 Asp Tyr Leu Leu Tyr Ser
 340

<210>984

<211>365

<212>PRT

<213>Chlamydia pneumoniae

<400>984

Ser Leu Leu Leu Ala Ile Phe Asn Val Asn Tyr Phe Met Asn Leu Cys
 1 5 10 15
 Lys Arg Ile Ser Phe Glu Glu Gly Leu Glu Leu Phe Val Ser Ser Pro
 20 25 30
 Ile Glu Arg Leu Gln Glu Arg Ala Asp Ala Ile Arg Lys Glu Arg Tyr
 35 40 45
 Pro Ser Asn Glu Val Thr Tyr Val Leu Asp Ala Asn Pro Asn Tyr Thr
 50 55 60
 Asn Ile Cys Lys Ile Asp Cys Thr Phe Cys Ala Phe Tyr Arg Lys Pro
 65 70 75 80
 Lys Ser Pro Asp Ala Tyr Leu Leu Ser Phe Asp Glu Val Arg Ser Leu
 85 90 95
 Leu Gln Arg Tyr Val Ser Ser Gly Val Lys Thr Val Leu Leu Gln Gly
 100 105 110
 Gly Val His Pro Gly Leu Gly Ile Asp Tyr Leu Glu Glu Leu Val Arg
 115 120 125
 Ile Thr Val Gln Glu Phe Pro Ser Ile His Pro His Phe Phe Ser Ala
 130 135 140
 Val Glu Ile Glu His Ala Cys Arg Val Ser Gly Ile Ser Ile Glu Gln
 145 150 155 160
 Gly Leu Gln Arg Leu Trp Asp Ala Gly Gln Arg Thr Ile Pro Gly Gly
 165 170 175
 Gly Ala Glu Ile Leu Ser Glu Arg Val Arg Lys Ile Ile Ser Pro Lys
 180 185 190

Lys Met Gln Pro Gly Gly Trp Ile Asn Leu His Lys Leu Ala His Leu
 195 200 205
 Met Gly Phe Arg Thr Thr Ala Thr Met Met Phe Gly His Val Glu Asn
 210 215 220
 Pro Glu Asp Ile Leu Ile His Leu Gln Thr Leu Arg Asp Ala Gln Asp
 225 230 235 240
 Ser Cys Pro Gly Phe Tyr Ser Phe Ile Pro Trp Ser Tyr Lys Pro Gly
 245 250 255
 Asn Thr Ala Leu Arg Arg Asn Val Pro Gln Gln Ala Ser Ile Glu Thr
 260 265 270
 Tyr Tyr Arg Ile Leu Ala Leu Gly Arg Ile Phe Leu Asp Asn Phe Asp
 275 280 285
 His Val Ala Ala Ser Trp Phe Gly Glu Gly Lys Ser Leu Gly Ala Lys
 290 295 300
 Ala Leu His Tyr Gly Ala Asp Asp Phe Gly Gly Val Ile Leu Asp Glu
 305 310 315 320
 Ser Val His Lys Ala Thr Gly Trp Ser Ile Gln Ser Ser Glu Glu Glu
 325 330 335
 Ile Cys Asn Ile Ile Arg Ser Glu Gly Phe Ile Pro Val Glu Arg Asn
 340 345 350
 Thr Phe Tyr Gln His Ile Ser Cys Thr Val Ser Ser Leu
 355 360 365

<210>985

<211>438

<212>PRT

<213>Chlamydia pneumoniae

<400>985

Val Val Ile Met Asp Asn Ser Asp Asn Ser Phe His Thr Leu Glu Thr
 1 5 10 15
 Glu Gln Gly Ser Phe Leu Asn Asp Glu Leu Ala Val Glu Glu Val Ala
 20 25 30
 Ser Thr Glu Ser Thr Glu Ile Ser Asp Ala Thr Leu Cys Phe Ala Asp
 35 40 45
 Glu Ile Gln Glu Leu Pro Ser Pro Glu Lys Lys Val Ala Phe Ile Leu
 50 55 60
 Asn Lys Met Arg Glu Ala Leu Thr Gly Ser Ser Gln Gly Ser Asp Leu
 65 70 75 80
 Arg Leu Phe Trp Asp Leu Arg Lys Gln Cys Leu Pro Leu Phe Asn Glu
 85 90 95
 Ile Glu Asp Thr Ala Lys Arg Ala Asp His Trp Arg Cys Tyr Ile Glu
 100 105 110
 Leu Thr Lys Glu Gly Arg His Leu Lys Gly Leu Gln Asp Glu Glu Gly
 115 120 125
 Ser Phe Val Val Gly Gln Ile Asp Leu Ala Ile Thr Cys Leu Glu Lys
 130 135 140
 Asp Ile Leu Lys Phe Gln Glu Gly Thr Glu Asp Lys Ile Phe Lys Asp
 145 150 155 160
 Arg Glu Asp Asn Phe Leu Glu Ser Gln Ala Leu Asp Lys His Gln Ala
 165 170 175
 Phe Tyr Lys Gln His His Thr Ser Leu Leu Trp Leu Ser Ser Phe Ser
 180 185 190
 Ser Lys Ile Ile Asp Leu Arg Lys Glu Leu Ile Asn Val Gly Met Arg
 195 200 205
 Met Arg Leu Lys Ser Lys Phe Phe Gln Arg Leu Ser Asn Leu Gly Asn
 210 215 220
 Gln Val Phe Pro Lys Arg Lys Glu Leu Ile Glu Lys Val Ser Gln Thr
 225 230 235 240
 Phe Ala Glu Asp Val Asp Ala Phe Val Ala Lys Tyr Phe Ile Gly Ser
 245 250 255
 Asp Lys Glu Thr Leu Lys Lys Thr Val Phe Phe Leu Arg Lys Glu Ile
 260 265 270
 Lys Asn Leu Gln His Ala Ala Lys Arg Leu Phe Val Ser Ser His Val
 275 280 285
 Phe Ala Glu Thr Arg Leu Lys Leu Ser Lys Cys Trp Asp Gln Leu Lys

290 295 300
 Gly Met Glu Lys Glu Ile Arg Gln Glu Gln Gly Arg Leu Arg Val Val
 305 310 315 320
 Ser Ala Glu Asn Ser Lys Glu Val Arg Gln Met Leu Ala Glu Val Ser
 325 330 335
 Ser Leu Leu Ile Glu Gly Asn Asp Leu Ser Lys Val Arg Lys Asp Leu
 340 345 350
 Glu Gly Ile Ser Lys Lys Ile Arg Ala Leu Asp Leu Thr His Asp Asp
 355 360 365
 Val Ile Ser Leu Lys Lys Glu Met Gln Gln Leu Phe Asp Gln Leu Arg
 370 375 380
 Glu Lys Gln Asp Ala Ala Glu His Ser Tyr Gln Glu Gln Leu Ala Lys
 385 390 395 400
 Asp Lys Gln Val Lys Lys Glu Ala Ala Arg Ser Leu Ala Glu Arg Ile
 405 410 415
 Thr Thr Phe Ser Lys Thr Cys Ser Glu Gly Thr Leu Leu Pro Asn Leu
 420 425 430
 Glu Lys Asn Gly Arg His
 435

<210>986

<211>142

<212>PRT

<213>Chlamydia pneumoniae

<400>986

Ala His His Asn Ile Leu Lys Asn Leu Leu Arg Arg Asn Ile Thr Ser
 1 5 10 15
 Glu Ser Arg Glu Trp Gln Thr Leu Lys Glu Leu Leu Gly Lys Met
 20 25 30
 Ser Phe Leu Pro Pro Pro Glu Lys Ile Ser Leu Asp Asn Gln Leu Asn
 35 40 45
 Leu Ala Leu Gln Thr Ile Val Asn Phe Phe Glu Glu Gln Leu Leu Ser
 50 55 60
 Ser Pro Asp Ser Arg Glu Lys Leu Val Asn Met Arg Gln Val Leu Lys
 65 70 75 80
 Gln Arg Arg Glu Arg Arg Gln Glu Leu Lys Asp Lys Leu Glu Gln Asp
 85 90 95
 Lys Lys Leu Leu Gly Ser Ser Gly Leu Asp Phe Asp Arg Ala Met Gln
 100 105 110
 Tyr Ser Ala Leu Val Glu Glu Asp Lys Arg Ala Leu Glu Glu Leu Asp
 115 120 125
 Ala Ser Ile Leu Glu Leu Lys Gln Gln Ile Gln Gln Leu Leu
 130 135 140

<210>987

<211>119

<212>PRT

<213>Chlamydia pneumoniae

<400>987

Met Asp Ser Phe Cys Phe Asp Leu Leu Lys Val Ala Ala Lys Ala Ile
 1 5 10 15
 Asp Asp Lys Lys Gly Asn Asn Leu Val Val Leu Asp Val Arg Thr Ile
 20 25 30
 Ser Glu Phe Thr Asp Tyr Phe Val Phe Val Glu Gly Ser Val Asn Val
 35 40 45
 His Val Lys Ala Leu Ala Asn Thr Ile Val Glu Glu Leu Lys Lys Gln
 50 55 60
 Lys Val Ser Pro Leu His Val Glu Gly Ile Thr Asp Gly Asn Trp Val
 65 70 75 80
 Val Ile Asp Tyr Gly Phe Ile Val Val His Val Phe Val Ser Glu Ile
 85 90 95
 Arg Gly Lys Tyr Arg Leu Glu Glu Leu Trp Lys Asp Gly Phe Ile Val
 100 105 110
 Thr Ser Lys Leu Leu Ala Ser
 115

<210>988

WO 99/27105

PCT/IB98/01890

<211>424

<212>PRT

<213>Chlamydia pneumoniae

<400>988

Leu Leu Asn Gly Val Arg Val Tyr Met Ser Lys Lys Arg Val Val Val
 1 5 10 15
 Thr Gly Phe Gly Val Val Ser Cys Leu Gly Asn Glu Val Asp Thr Phe
 20 25 30
 Tyr Asp Asn Leu Leu Ala Gly Val Ser Gly Val Arg Pro Ile Thr Ser
 35 40 45
 Phe Pro Cys Glu Asp Tyr Ala Thr Arg Phe Ala Gly Trp Ile Pro Glu
 50 55 60
 Phe Asn Pro Glu Pro Tyr Val Asp Lys Lys Gln Ala Arg Arg Val Asp
 65 70 75 80
 Pro Phe Ile Thr Tyr Ala Met Val Ala Ala Lys Lys Ala Ile Ala Met
 85 90 95
 Ser Arg Trp Asp Lys Asp His Leu Pro Ser Asp Pro Val Arg Cys Gly
 100 105 110
 Val Ile Val Gly Ser Gly Met Gly Gly Leu Ser Thr Leu Asp Gln Gly
 115 120 125
 Met Glu Arg Leu Leu Val Ile His Lys Lys Leu Ser Pro Phe Phe Ile
 130 135 140
 Pro Tyr Ile Ile Thr Asn Met Ala Pro Ala Leu Ile Ala Met Asp Phe
 145 150 155 160
 Gly Leu Met Gly Pro Asn Tyr Ser Ile Ser Thr Ala Cys Ala Thr Gly
 165 170 175
 Asn Tyr Cys Ile Asp Ala Ala Tyr Gln His Leu Val Ser Gly Arg Ala
 180 185 190
 Asp Met Ile Ile Cys Gly Gly Thr Glu Ala Ala Val Asn Arg Ile Gly
 195 200 205
 Leu Glu Gly Phe Ile Ala Asn Arg Ala Leu Ser Glu Arg Asn Asp Ala
 210 215 220
 Pro Asp Gln Ala Ser Arg Pro Trp Asp Arg Asp Arg Gly Phe Val
 225 230 235 240
 Leu Gly Glu Gly Ala Gly Ile Leu Val Leu Glu Thr Leu Glu Ser Ala
 245 250 255
 Leu Arg Arg Asp Ala Pro Ile Phe Ala Glu Met Leu Gly Ser Tyr Val
 260 265 270
 Thr Cys Asp Ala Phe His Ile Thr Ala Pro Arg Asp Asp Gly Glu Gly
 275 280 285
 Ile Thr Ala Cys Val Leu Gly Ala Leu Asn Ser Ala Gly Ile Pro Lys
 290 295 300
 Glu Arg Val Asn Tyr Val Asn Ala His Gly Thr Ser Thr Pro Leu Gly
 305 310 315 320
 Asp Leu Ser Glu Val Leu Ala Val Lys Lys Ala Phe Gly Ser His Val
 325 330 335
 Arg Asn Leu Arg Met Asn Ser Thr Lys Ser Leu Ile Gly His Cys Leu
 340 345 350
 Gly Ala Ala Gly Gly Val Glu Ala Val Val Ala Ile Gln Ala Ile Leu
 355 360 365
 Thr Gly Lys Leu His Pro Thr Ile Asn Leu Asp Asn Pro Ile Ala Glu
 370 375 380
 Ile Glu Asp Phe Asp Val Val Ala Asn Lys Ala Gln Asp Trp Asp Ile
 385 390 395 400
 Asp Val Ala Met Ser Asn Ser Phe Gly Phe Gly Gly His Asn Ser Thr
 405 410 415
 Ile Leu Phe Ser Arg Tyr Val Pro
 420

<210>989

<211>150

<212>PRT

<213>Chlamydia pneumoniae

<400>989

Met Met Lys Thr Lys Tyr Glu Tyr Ser Phe Gly Val Ile Pro Ile Lys

1 5 10 15
 Phe Phe Gly Thr Pro Asp Lys Asn Thr Leu Lys Ala Cys Phe Ile Cys
 20 25 30
 His Thr Arg Gly Lys His Trp Gly Phe Pro Lys Gly His Ser Glu Asp
 35 40 45
 Lys Glu Gly Pro Gln Glu Ala Glu Arg Glu Leu Val Glu Glu Thr
 50 55 60
 Gly Leu Ser Val Val Asn Phe Phe Pro Lys Val Leu Ile Glu Gln Tyr
 65 70 75 80
 Ser Phe Asn Asn Glu Glu Gln Val Phe Val Arg Lys Glu Val Thr Tyr
 85 90 95
 Phe Leu Ala Glu Val Arg Gly Asp Ile His Ala Asp Pro Met Glu Ile
 100 105 110
 Cys Asp Ser Gln Trp Leu Ser Leu Gln Glu Gly Leu Arg Leu Leu Ser
 115 120 125
 Phe Pro Glu Leu Arg Asp Leu Thr Val Glu Ala Asp Lys Phe Ile Asn
 130 135 140
 Asn Tyr Leu Phe Ser Ser
 145 150

<210>990

<211>215

<212>PRT

<213>Chlamydia pneumoniae

<400>990

Met Ser Lys Lys Pro Leu Tyr Val Ala His Pro Trp His Ser Pro Thr
 1 5 10 15
 Leu Thr Gln Asp Asn Tyr Glu Ser Leu Cys Cys Tyr Ile Glu Ile Thr
 20 25 30
 Pro Tyr Asp Ser Val Lys Phe Glu Leu Asp Lys Ala Thr Gly Leu Leu
 35 40 45
 Lys Val Asp Arg Pro Gln Lys Phe Ser Asn Phe Cys Pro Cys Leu Tyr
 50 55 60
 Gly Leu Leu Pro Gln Thr Tyr Cys Gly Thr Ala Ser Gly Asn Tyr Ser
 65 70 75 80
 Gly Glu Gln Thr Arg Arg Glu Gly Ile Gln Gly Asp Lys Asp Pro Leu
 85 90 95
 Asp Val Cys Val Leu Thr Glu Lys Asn Ile His His Gly Asn Ile Leu
 100 105 110
 Leu Gln Ala Arg Pro Ile Gly Gly Leu Arg Ile Ile Asp Ser Gly Glu
 115 120 125
 Ala Asp Asp Lys Ile Ile Ala Val Leu Glu Asp Asp Leu Val Phe Ala
 130 135 140
 Glu Ile Glu Asp Ile Ser Asp Cys Pro Gly Thr Val Leu Asp Met Ile
 145 150 155 160
 Gln His Tyr Phe Leu Thr Tyr Lys Ala Thr Pro Asn His Leu Ile Lys
 165 170 175
 Gly Ser Pro Ala Lys Ile Glu Ile Val Gly Ile Tyr Gly Lys Lys Glu
 180 185 190
 Ala Gln Lys Val Ile Gln Leu Ala His Glu Asp Tyr Leu Ser Tyr Ile
 195 200 205
 Gly Asp Thr Ala Glu Val Asn
 210 215

<210>991

<211>351

<212>PRT

<213>Chlamydia pneumoniae

<400>991

Met Lys Tyr Ser Leu Asn Phe Lys Glu Ile Lys Ile Asp Asp Tyr Glu
 1 5 10 15
 Arg Val Ile Glu Val Thr Cys Ser Lys Val Arg Leu His Ala Ile Ile
 20 25 30
 Ala Ile His Gln Thr Ala Val Gly Pro Ala Leu Gly Gly Val Arg Ala
 35 40 45
 Ser Leu Tyr Ser Ser Phe Glu Asp Ala Cys Thr Asp Ala Leu Arg Leu

50 55 60
 Ala Arg Gly Met Thr Tyr Lys Ala Ile Ile Ser Asn Thr Gly Thr Gly
 65 70 75 80
 Gly Gly Lys Ser Val Ile Ile Leu Pro Gln Asp Ala Pro Ser Leu Thr
 85 90 95
 Glu Asp Met Leu Arg Ala Phe Gly Gln Ala Val Asn Ala Leu Glu Gly
 100 105 110
 Thr Tyr Ile Cys Ala Glu Asp Leu Gly Val Ser Ile Asn Asp Ile Ser
 115 120 125
 Ile Val Ala Glu Glu Thr Pro Tyr Val Cys Gly Ile Ala Asp Val Ser
 130 135 140
 Gly Asp Pro Ser Ile Tyr Thr Ala His Gly Gly Phe Leu Cys Ile Lys
 145 150 155 160
 Glu Thr Ala Lys Tyr Leu Trp Gly Ser Ser Ser Leu Arg Gly Lys Lys
 165 170 175
 Ile Ala Ile Gln Gly Ile Gly Ser Val Gly Arg Arg Leu Leu Gln Ser
 180 185 190
 Leu Phe Phe Glu Gly Ala Glu Leu Tyr Val Ala Asp Val Leu Glu Arg
 195 200 205
 Ala Val Gln Asp Ala Ala Arg Leu Tyr Gly Ala Thr Ile Val Pro Thr
 210 215 220
 Glu Glu Ile His Ala Leu Glu Cys Asp Ile Phe Ser Pro Cys Ala Arg
 225 230 235 240
 Gly Asn Val Ile Arg Lys Asp Asn Leu Ala Asp Leu Asn Cys Lys Ala
 245 250 255
 Ile Val Gly Val Ala Asn Asn Gln Leu Glu Asp Ser Ser Ala Gly Met
 260 265 270
 Met Leu His Glu Arg Gly Ile Leu Tyr Gly Pro Asp Tyr Leu Val Asn
 275 280 285
 Ala Gly Gly Leu Leu Asn Val Ala Ala Ala Ile Glu Gly Arg Val Tyr
 290 295 300
 Ala Pro Lys Glu Val Leu Lys Val Glu Glu Leu Pro Ile Val Leu
 305 310 315 320
 Ser Lys Leu Tyr Asn Gln Ser Lys Thr Thr Gly Lys Asp Leu Val Ala
 325 330 335
 Leu Ser Asp Ser Phe Val Glu Asp Lys Leu Leu Ala Tyr Thr Ser
 340 345 350

<210>992

<211>325

<212>PRT

<213>Chlamydia pneumoniae

<400>992

Met His Ser Glu Leu Pro Asn Tyr Gln Asn Ile Val Glu Ser Val Val
 1 5 10 15
 Thr Glu Ile Thr Thr Gln Leu Leu Asn Tyr Arg Ser Glu His Arg Leu
 20 25 30
 Val Pro Phe Trp Glu Lys Ser Asp Gly Ser Phe Ile Thr Ala Ala Asp
 35 40 45
 Tyr Gly Ser Gln Tyr Tyr Leu Lys Gln Gln Leu Ala Lys Ala Phe Pro
 50 55 60
 Asn Ile Pro Phe Ile Gly Glu Glu Thr Leu Tyr Pro Asp Gln Asp Asn
 65 70 75 80
 Glu Lys Ile Pro Glu Ile Leu Lys Phe Thr Arg Leu Leu Thr Ser Ser
 85 90 95
 Val Ser Arg Asp Asp Leu Ile Ser Thr Leu Val Pro Pro Pro Ser Pro
 100 105 110
 Thr Ser Leu Phe Trp Leu Val Asp Pro Ile Asp Gly Thr Ala Gly Phe
 115 120 125
 Ile Arg His Arg Ala Phe Ala Val Ala Ile Ser Leu Ile Tyr Glu Tyr
 130 135 140
 Arg Pro Ile Leu Ser Val Met Ala Cys Pro Ala Tyr Asn Gln Thr Phe
 145 150 155 160
 Lys Leu Tyr Ser Ala Ala Lys Gly His Gly Leu Ser Ile Val His Ser
 165 170 175

WO 99/27105

PCT/IB98/01890

Gln Asn Leu Asp Arg Arg Phe Val Tyr Ala Asp Arg Lys Gln Thr Lys
 180 185 190
 Gln Phe Cys Glu Ala Ser Leu Ala Leu Asn Gln Gln His His Ala
 195 200 205
 Thr Arg Lys Leu Ser Leu Gly Leu Pro Asn Thr Pro Ser Pro Arg Arg
 210 215 220
 Val Glu Ser Gln Tyr Lys Tyr Ala Leu Val Ala Glu Gly Ala Val Asp
 225 230 235 240
 Phe Phe Ile Arg Tyr Pro Phe Ile Asp Ser Pro Ala Arg Ala Trp Asp
 245 250 255
 His Val Pro Gly Ala Phe Leu Val Glu Glu Ala Gly Gly Arg Val Thr
 260 265 270
 Asp Ala Leu Gly Ala Pro Leu Glu Tyr Arg Lys Glu Ser Leu Val Leu
 275 280 285
 Asn Asn His Ala Val Ile Leu Ala Ser Gly Asp Gln Glu Thr His Glu
 290 295 300
 Thr Thr Leu Ala Ala Leu Gln Asn Gln Leu Asn Val Val Pro Thr Asp
 305 310 315 320
 Lys Leu Ile Ala Leu
 325

<210>993

<211>246

<212>PRT

<213>Chlamydia pneumoniae

<400>993

Gly Glu Leu Met Leu Ile Lys Leu Trp Arg Ala Thr Tyr Glu Gly Met
 1 5 10 15
 Tyr Thr Phe Leu Val Gly Ala Leu Leu Lys Leu Arg Tyr Arg Met Gln
 20 25 30
 Val Glu Gly Trp Asp Thr Leu Asn Ile Asn Pro Lys Gln Gly Cys Leu
 35 40 45
 Phe Leu Ala Asn His Val Ala Glu Val Asp Pro Ile Ile Leu Glu Tyr
 50 55 60
 Leu Phe Trp Ser Arg Phe His Val Arg Pro Met Ala Val Glu Tyr Leu
 65 70 75 80
 Phe His Ser Arg Val Val Gln Trp Phe Leu Asn Ser Val Arg Ser Ile
 85 90 95
 Pro Ile Pro Gln Leu Val Pro Gly Lys Glu Ser Lys Arg Ser Leu Glu
 100 105 110
 Arg Met Asn Val Cys Tyr Glu Glu Ala Ser Arg Ala Leu Asn Arg Gly
 115 120 125
 Glu Ser Leu Leu Leu Tyr Pro Ser Gly Arg Leu Ser Arg Thr Gly Lys
 130 135 140
 Glu Glu Ile Val Asn Gln Tyr Ser Ala Tyr Val Leu Leu His Arg Val
 145 150 155 160
 Met Glu Cys Asn Val Val Leu Val Arg Val Ser Gly Leu Trp Gly Ser
 165 170 175
 Ala Phe Ser Arg Tyr Lys Gln Asn Ser Thr Pro Lys Leu Gly Pro Ala
 180 185 190
 Phe Lys Glu Ala Phe Arg Ala Leu Leu Arg Arg Gly Ile Phe Phe Met
 195 200 205
 Pro Lys Arg Phe Val Lys Ile Thr Leu Cys Gln Val Asp His Leu Phe
 210 215 220
 Leu Lys Gln Phe Pro Thr Lys Gln Asp Leu Asn Thr Phe Leu Ala Ser
 225 230 235 240
 Trp Phe Lys Ser Arg Arg
 245

<210>994

<211>567

<212>PRT

<213>Chlamydia pneumoniae

<400>994

Ile Leu Phe Trp Leu Leu Gly Leu Asn Gln Gly Asp Asp Asn Leu Pro
 1 5 10 15

Ile Glu Val Pro Leu Arg Ile Thr Arg Lys Leu Arg Arg Met His Asp
 20 25 30
 Gln Arg Asn Arg Gly His Asn Asn His Asn Leu Arg Leu Arg Pro Gly
 35 40 45
 Ser Thr Leu Leu Glu Ala Phe Leu Ile Leu Cys Ser Glu His Glu Glu
 50 55 60
 Gly Ile Ala Cys Phe Asp Glu His Leu Gly Ser Leu Ser Tyr Arg Glu
 65 70 75 80
 Leu Arg Asn Ala Ile Ile Ala Val Ala Ile Lys Val Ser Lys Phe Ser
 85 90 95
 Glu Asp Arg Val Gly Val Met Met Pro Ala Ser Ile Gly Ala Phe Ile
 100 105 110
 Ala Tyr Phe Gly Ile Leu Leu Ala Gly Lys Thr Pro Val Met Met Asn
 115 120 125
 Trp Ser Gln Gly Leu Arg Glu Leu Arg Ala Cys Thr Lys Thr Val Glu
 130 135 140
 Val Arg Arg Val Leu Thr Ser Gln Gln Phe Ile Lys His Leu Thr Glu
 145 150 155 160
 Val Gln Gly Phe Val Glu Tyr Pro Phe Asp Leu Met Tyr Met Glu Asp
 165 170 175
 Val Arg Lys Arg Leu Ser Trp Trp Glu Lys Cys Arg Ile Gly Leu Tyr
 180 185 190
 Ser Lys Cys Ser Val Pro Trp Leu Leu Arg Ile Phe Gly Val Ser Gly
 195 200 205
 Val Glu Ser Asp Asp Thr Ala Val Ile Leu Phe Thr Ser Gly Thr Glu
 210 215 220
 Lys Leu Pro Lys Ala Val Pro Leu Thr His Lys Asn Leu Met Glu Asn
 225 230 235 240
 Gln Glu Ala Cys Leu Lys Phe Phe Asp Pro Asn Thr Gln Asp Val Met
 245 250 255
 Leu Ala Phe Leu Pro Pro Phe His Ala Tyr Gly Phe Asn Ser Cys Gly
 260 265 270
 Leu Phe Pro Leu Leu Met Gly Val His Val Val Phe Ala Ser Asn Pro
 275 280 285
 Leu Asn Pro Lys Lys Leu Val Glu Phe Ile Asp Asp Lys Lys Val Thr
 290 295 300
 Phe Phe Gly Ser Thr Pro Val Phe Phe Asp Tyr Ile Leu Lys Thr Ala
 305 310 315 320
 Lys Lys Gln Asn Ser Cys Leu Glu Ser Leu Arg Leu Val Val Ile Gly
 325 330 335
 Gly Asp Ala Leu Lys Asp Thr Leu Tyr Glu Glu Thr Lys Lys Leu Gln
 340 345 350
 Pro Gln Ile Ala Leu Tyr Gln Gly Tyr Gly Ala Thr Glu Cys Ser Pro
 355 360 365
 Val Ile Ser Ile Thr Thr Lys Glu Ser Pro Arg Lys Ser Glu Cys Val
 370 375 380
 Gly Met Pro Ile Glu Gly Met Asp Val Leu Ile Ile Ser Lys Glu Thr
 385 390 395 400
 His Ile Pro Val Ser Ser Gly Glu Gln Gly Leu Ile Val Val Arg Gly
 405 410 415
 Asn Ser Val Phe Ser Gly Tyr Leu Gly Asn His Glu His Gln Ser Phe
 420 425 430
 Val Ser Leu Gly Gly Asp Gln Trp Tyr Leu Thr Gly Asp Leu Gly His
 435 440 445
 Ile Gly Pro Ser Gly Asp Leu Phe Leu Glu Gly Arg Leu Ser Arg Phe
 450 455 460
 Val Lys Ile Gly Gly Glu Met Val Ser Leu Glu Ala Leu Glu Ser Ile
 465 470 475 480
 Leu His Glu His Phe Thr Glu Asn Gln Asn Glu Asp Ala Gly Ser Leu
 485 490 495
 Val Val Cys Gly Ile Pro Gly Asp Lys Val Arg Leu Cys Leu Phe Thr
 500 505 510
 Thr Leu Ala Thr Thr Ile His Glu Val Asn Asp Ile Leu Lys Ser Ala
 515 520 525

Glu Thr Ser Ser Ile Val Lys Ile Ser Tyr Val His Gln Val Glu Ser
 530 535 540
 Ile Pro Ile Leu Gly Ile Gly Lys Pro Asp Tyr Val Ser Leu Asn Ala
 545 550 555 560
 Leu Ala Val Ser Leu Phe Gly
 565

<210>995

<211>376

<212>PRT

<213>Chlamydia pneumoniae

<400>995

Val Cys Lys Glu Ser Phe Leu Thr Thr Ser Asp Val Ile Asp Phe Val
 1 5 10 15
 Thr Asn Asp Phe Leu Gly Phe Ala Arg Ser Pro Thr Ile Tyr Cys Glu
 20 25 30
 Val Ser Lys Arg Phe Gln Ile His Cys Gln Gln Phe Pro His Glu Lys
 35 40 45
 Leu Gly Ile Arg Gly Ser Arg Leu Met Val Gly Pro Ser Ser Val Ile
 50 55 60
 Asp Asp Leu Glu Ser Lys Ile Ala Ser Tyr His Gly Ala Pro Asn Ala
 65 70 75 80
 Phe Ile Val Asn Ser Gly Tyr Met Ala Asn Leu Gly Leu Cys His His
 85 90 95
 Val Ser Arg Ser Thr Asp Val Leu Leu Trp Asp Glu Glu Val His Met
 100 105 110
 Ser Val Val His Ser Leu Ser Ala Ile Ser Gly Gln His His Thr Phe
 115 120 125
 His His Asn Asn Leu Glu His Leu Glu Ser Leu Leu Gln Cys Tyr Arg
 130 135 140
 Ile Ser Ser Lys Gly Arg Ile Phe Ile Phe Val Ser Ser Val Tyr Ser
 145 150 155 160
 Phe Arg Gly Thr Leu Ala Pro Leu Glu Gln Ile Ile Ala Leu Ser Lys
 165 170 175
 Lys Tyr His Ala His Leu Ile Val Asp Glu Ala His Ala Met Gly Ile
 180 185 190
 Phe Gly Asp Asp Gly Lys Gly Leu Cys His Ala Leu Gly Tyr Glu Asn
 195 200 205
 Phe Tyr Ala Val Leu Val Thr Tyr Gly Lys Ala Leu Gly Thr Met Gly
 210 215 220
 Ala Ser Leu Leu Thr Ser Ser Glu Val Lys Tyr Asp Leu Met Gln Asn
 225 230 235 240
 Ser Pro Pro Leu Arg Tyr Ser Thr Ser Leu Ser Pro His Thr Leu Ile
 245 250 255
 Ser Ile Gly Thr Ala Tyr Asp Phe Leu Ala Ser Glu Gly Glu Ile Ala
 260 265 270
 Arg Lys Gln Val Phe Lys Leu Lys Glu His Phe His Glu Cys Phe Asp
 275 280 285
 Ser His Ala Pro Gly Cys Val Gln Pro Ile Phe Leu Pro His Thr Cys
 290 295 300
 Leu Glu Glu Ala Ile Ser Val Leu Glu Thr Thr Gly Ile His Val Gly
 305 310 315 320
 Val Val Ala Phe Ala Lys His Pro Phe Leu Arg Val Asn Leu His Ala
 325 330 335
 Tyr Asn Thr Val Asp Glu Val Asn Leu Leu Ala Gln Val Met Lys Pro
 340 345 350
 Tyr Leu Glu Lys Ser Ser His Arg Val His Ile Asn His Glu Phe His
 355 360 365
 Leu Trp Arg Glu Leu Cys Gln His
 370 375

<210>996

<211>758

<212>PRT

<213>Chlamydia pneumoniae

<400>996

Lys Arg Phe Thr Ala Lys Thr Lys Ser Met Gly Tyr Ile Glu Ser Ser
 1 5 10 15
 Thr Phe Arg Leu Tyr Ala Glu Val Ile Val Gly Ser Asn Ile Asn Lys
 20 25 30
 Val Leu Asp Tyr Gly Val Pro Glu Asn Leu Glu His Ile Thr Lys Gly
 35 40 45
 Thr Ala Val Thr Ile Ser Leu Arg Gly Gly Lys Lys Val Gly Val Ile
 50 55 60
 Tyr Gln Ile Lys Thr Thr Thr Gln Cys Lys Lys Ile Leu Pro Ile Leu
 65 70 75 80
 Gly Leu Ser Asp Ser Glu Ile Val Leu Pro Gln Asp Leu Leu Asp Leu
 85 90 95
 Leu Phe Trp Ile Ser Gln Tyr Tyr Phe Ala Pro Leu Gly Lys Thr Leu
 100 105 110
 Lys Leu Phe Leu Pro Ala Ile Ser Ser Asn Val Ile Gln Pro Lys Gln
 115 120 125
 His Tyr Arg Val Val Leu Lys Gln Ser Lys Ala Lys Thr Lys Glu Ile
 130 135 140
 Leu Ala Lys Leu Glu Val Leu His Pro Ser Gln Gly Ala Val Leu Lys
 145 150 155 160
 Ile Leu Leu Gln His Ala Ser Pro Pro Gly Leu Ser Ser Leu Met Glu
 165 170 175
 Thr Ala Lys Val Ser Gln Ser Pro Ile His Ser Leu Glu Lys Leu Gly
 180 185 190
 Ile Leu Asp Ile Val Asp Ala Ala Gln Leu Glu Leu Gln Glu Asp Leu
 195 200 205
 Leu Thr Phe Phe Pro Pro Ala Pro Lys Asp Leu His Pro Glu Gln Gln
 210 215 220
 Ser Ala Ile Asp Lys Ile Phe Ser Ser Leu Lys Thr Ser Gln Phe His
 225 230 235 240
 Thr His Leu Leu Phe Gly Ile Thr Gly Ser Gly Lys Thr Glu Ile Tyr
 245 250 255
 Leu Arg Ala Thr Ser Glu Ala Leu Lys Gln Gly Lys Ser Thr Ile Leu
 260 265 270
 Leu Val Pro Glu Ile Ala Leu Thr Val Gln Thr Val Ser Leu Phe Lys
 275 280 285
 Ala Arg Phe Gly Lys Asp Val Gly Val Leu His His Lys Leu Ser Asp
 290 295 300
 Ser Asp Gln Lys Ser His Val Ala Pro Ser Phe Arg Arg Ser Leu Arg
 305 310 315 320
 Ile Leu Ile Gly Pro Arg Ser Ala Leu Phe Cys Pro Met Lys Asn Leu
 325 330 335
 Gly Leu Ile Ile Val Asp Glu Glu His Asp Pro Ala Tyr Lys Gln Thr
 340 345 350
 Glu Ser Pro Pro Cys Tyr His Ala Arg Asp Val Ala Val Met Arg Gly
 355 360 365
 Lys Leu Ala His Ala Thr Val Val Leu Gly Ser Ala Thr Pro Ser Leu
 370 375 380
 Glu Ser Tyr Thr Asn Ala Leu Ser Gly Lys Tyr Val Leu Ser Arg Leu
 385 390 395 400
 Ser Ser Arg Ala Ala Ala His Pro Ala Lys Ile Ser Leu Ile Asn
 405 410 415
 Met Asn Leu Glu Arg Glu Lys Ser Lys Thr Lys Ile Leu Phe Ser Gln
 420 425 430
 Pro Val Leu Lys Lys Ile Ala Glu Arg Leu Glu Val Gly Glu Gln Val
 435 440 445
 Leu Ile Phe Phe Asn Arg Arg Gly Tyr His Thr Asn Val Ser Cys Thr
 450 455 460
 Val Cys Lys His Thr Leu Lys Cys Pro His Cys Asp Met Val Leu Thr
 465 470 475 480
 Phe His Lys Tyr Ala Asn Val Leu Leu Cys His Leu Cys Asn Ser Ser
 485 490 495
 Pro Lys Asp Leu Pro Gln Ser Cys Pro Lys Cys Leu Gly Thr Met Thr
 500 505 510

Leu Gln Tyr Arg Gly Ser Gly Thr Glu Lys Ile Glu Lys Ile Leu Gln
 515 520 525
 Gln Ile Phe Pro Gln Ile Arg Thr Ile Arg Ile Asp Ser Asp Thr Thr
 530 535 540
 Lys Phe Lys Gly Ser His Glu Thr Leu Leu Arg Gln Phe Ala Thr Gly
 545 550 555 560
 Lys Ala Asp Val Leu Ile Gly Thr Gln Met Ile Ala Lys Gly Met Asn
 565 570 575
 Phe Ser Ala Val Thr Leu Ala Val Ile Leu Asn Gly Asp Ser Gly Leu
 580 585 590
 Tyr Ile Pro Asp Phe Arg Ala Ser Glu Gln Val Phe Gln Leu Ile Thr
 595 600 605
 Gln Val Ala Gly Arg Ser Gly Arg Ser His Leu Pro Gly Glu Ile Leu
 610 615 620
 Ile Gln Ser Phe Leu Pro Asp His Pro Thr Ile His Ser Ala Met Arg
 625 630 635 640
 Gln Asp Tyr Ser Ala Phe Tyr Ser Gln Glu Ile Thr Gly Arg Glu Leu
 645 650 655
 Cys Glu Tyr Pro Phe Ile Arg Leu Ile Arg Cys Ile Phe Met Gly
 660 665 670
 Lys Cys Pro Lys Gln Thr Trp Glu Glu Ala His Arg Val His Asn Ile
 675 680 685
 Leu Lys Glu Gln Leu Glu Ser Thr Asn Pro Leu Met Pro Val Thr Pro
 690 695 700
 Cys Gly His Phe Lys Ile Lys Asp Thr Phe Arg Tyr Gln Phe Leu Ile
 705 710 715 720
 Lys Ser Ala Tyr Val Ile Pro Val Asn Lys Lys Leu His His Ala Leu
 725 730 735
 Met Leu Ala Lys Leu Ser Pro Lys Val Lys Phe Met Ile Asp Val Asp
 740 745 750
 Pro Met Thr Thr Phe Phe
 755

<210>997

<211>230

<212>PRT

<213>Chlamydia pneumoniae

<400>997

Lys His Trp Leu Phe Met Glu Asn Ser Gln Asn Phe His Asp Thr Leu
 1 5 10 15
 Cys Gln Leu Leu Asp Arg Tyr Ser Glu Glu Leu Tyr Pro Thr Leu Ala
 20 25 30
 Ser Leu Leu Asn Val Thr Leu Pro Asn Thr Ala Ile Ser Ala Ser Val
 35 40 45
 Ser Ser Ile Pro Glu Lys Ala Val Glu Val Pro Asn Ala Glu Pro Gln
 50 55 60
 Pro Ile Thr Pro Pro Pro Thr Asn Leu Ser Gln Glu Lys Thr Lys
 65 70 75 80
 Pro Ser Asp Trp Lys Cys Val Pro Leu His Pro Asp Leu Ser Gln Asn
 85 90 95
 Ala Ile Leu Lys Glu Lys Tyr Pro Ala Leu Lys Asp Cys Ser Leu Pro
 100 105 110
 Ala Pro Lys Ile Pro Cys Ser Ile Phe Val Tyr Glu Glu Asn Asn Glu
 115 120 125
 Glu Val Leu Phe Phe Asn Arg Leu Ala Lys Ile Leu Thr Gln Gln Leu
 130 135 140
 Phe Pro Thr Lys Leu Thr Leu Ile His Ala Lys Thr Asn Ile Phe Val
 145 150 155 160
 Asn Asn Pro Asn Phe Phe Leu Ala Leu Ala Pro Leu Asn Val Ile Arg
 165 170 175
 Tyr Lys Ile Pro Thr Thr Asp Tyr His Gln Ser Leu Thr Gln Asn Gly
 180 185 190
 Cys Ile Phe Leu Pro Leu Tyr Ser Ser Leu Glu Tyr Glu Lys Asp Ser
 195 200 205
 Gln Leu Lys Arg Asn Leu Trp Ala Ile Leu Asn Arg Leu Pro Phe Ala

210 215 220
 Tyr Thr Pro Lys Ser Ser
 225 230
 <210>998
 <211>166
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>998
 His Glu Ile Leu Val Ala Arg Met Cys Phe Cys Arg Leu Ser Ala Ile
 1 5 10 15
 Asp Phe Thr Leu Leu Cys Cys Thr Lys Thr Cys Phe Trp Arg Asn Leu
 20 25 30
 Gln Gln Thr Arg Pro Ile Ala Ala Asn Leu Gln Trp Glu Ser Tyr
 35 40 45
 Ala Glu Ala Leu Glu His Ser Lys Gln Asp His Lys Pro Ile Cys Leu
 50 55 60
 Phe Phe Thr Gly Ser Asp Trp Cys Met Trp Cys Ile Lys Met Gln Asp
 65 70 75 80
 Gln Ile Leu Gln Ser Ser Glu Phe Lys His Phe Ala Gly Val His Leu
 85 90 95
 His Met Val Glu Val Asp Phe Pro Gln Lys Asn His Gln Pro Glu Glu
 100 105 110
 Gln Arg Gln Lys Asn Gln Glu Leu Lys Ala Gln Tyr Lys Val Thr Gly
 115 120 125
 Phe Pro Glu Leu Val Phe Ile Asp Ala Glu Gly Lys Gln Leu Ala Arg
 130 135 140
 Met Gly Phe Glu Pro Gly Gly Ala Ala Tyr Val Ser Lys Val Lys
 145 150 155 160
 Ser Ala Leu Lys Leu Arg
 165

<210>999

<211>380

<212>PRT

<213>Chlamydia pneumoniae

<400>999

Met Ile Pro Ser Pro Thr Pro Ile Asn Phe Arg Asp Asp Thr Ile Leu
 1 5 10 15
 Glu Thr Asp Pro Lys Pro Ser Leu Ile Met Phe Ser Ser Lys Lys Thr
 20 25 30
 Glu Ile Ala Ser Glu Arg Arg Lys Ala His Pro Thr Leu Phe Lys Val
 35 40 45
 Leu Gly Thr Ile Trp Asn Ile Val Lys Phe Ile Ile Ser Ile Ile Leu
 50 55 60
 Phe Leu Pro Leu Ala Leu Leu Trp Val Leu Lys Lys Thr Cys Gln Phe
 65 70 75 80
 Phe Ile Leu Pro Ser Ser Ile Ile Ser Gln Ser Met Ser Lys Thr Ala
 85 90 95
 Val Ala Ile Arg Arg Met Thr Phe Leu Ser His Ile Lys Gln Leu Leu
 100 105 110
 Ser Leu Lys Glu Ile Ser Ala Ala Asp Arg Val Val Ile Gln Tyr Asp
 115 120 125
 Asp Leu Val Val Asp Ser Leu Ala Ile Lys Ile Pro His Ala Leu Pro
 130 135 140
 His Arg Trp Ile Leu Tyr Ser Gln Gly Asn Ser Gly Leu Met Glu Asn
 145 150 155 160
 Leu Phe Asp Arg Gly Asp Ser Ser Leu His Gln Leu Ala Lys Ala Thr
 165 170 175
 Gly Ser Asn Leu Leu Val Phe Asn Tyr Pro Gly Ile Met Ser Ser Lys
 180 185 190
 Gly Glu Ala Lys Arg Glu Asn Leu Val Lys Ser Tyr Gln Ala Cys Val
 195 200 205
 Arg Tyr Leu Arg Asp Glu Glu Thr Gly Pro Lys Ala Asn Gln Ile Ile
 210 215 220
 Ala Phe Gly Tyr Ser Leu Gly Thr Ser Val Gln Ala Ala Ala Leu Asp

WO 99/27105

PCT/IB98/01890

225 230 235 240
Arg Glu Val Thr Asp Gly Ser Asp Gly Thr Ser Trp Ile Val Val Lys
245 250 255
Asp Arg Gly Pro Arg Ser Leu Ala Asp Val Ala Asn Gln Ile Cys Lys
260 265 270
Pro Ile Ala Ser Ala Ile Ile Lys Leu Val Gly Trp Asn Ile Asp Ser
275 280 285
Val Lys Pro Ser Glu Arg Leu Arg Cys Pro Glu Ile Phe Ile Tyr Asn
290 295 300
Ser Asn His Asp Gln Glu Leu Ile Ser Asp Gly Leu Phe Glu Arg Glu
305 310 315 320
Asn Cys Val Xaa Thr Pro Phe Leu Glu Leu Pro Glu Val Lys Thr Ser
325 330 335
Gly Thr Lys Ile Pro Ile Pro Glu Arg Asp Leu Leu His Leu Asn Pro
340 345 350
Leu Ser Pro Asn Val Val Asp Arg Leu Ala Ala Val Ile Ser Asn Tyr
355 360 365
Leu Asp Ser Glu Asn Arg Lys Ser Gln Gln Pro Asp
370 375 380
<210>1000
<211>377
<212>PRT
<213>Chlamydia pneumoniae
<400>1000
Phe Thr Leu Leu Asn Leu Ser Asn Arg Ser Asp Ile Leu Ser Gly Ile
1 5 10 15
Phe Ser Asn Pro His Pro Val Ser Tyr Phe Ser Ser Thr His Ala Lys
20 25 30
Gln Leu Ser Asp Phe Ser Lys Lys His Pro Ile Leu Thr Lys Ile Val
35 40 45
Thr Ile Ile Val Lys Ile Phe Lys Leu Leu Ile Gly Leu Ile Ile Pro
50 55 60
Pro Leu Gly Ile Tyr Trp Leu Cys Gln Leu Val Cys Ser Leu Ala Leu
65 70 75 80
Phe Pro Arg Ser Ser Met Leu Tyr Ser Val Leu Lys Thr Cys Phe Lys
85 90 95
Lys Tyr Arg Leu Glu Gln Glu Ile Gln Asp Tyr Phe Val Lys Asn Leu
100 105 110
Asp Pro Ser Phe Lys Asp Pro Ala Val Ser Glu Ser Lys Arg Ile Thr
115 120 125
Ile Gln Gln Asp His Leu Thr Ile Asp Thr Leu Ala Ile His Phe Ser
130 135 140
Thr Ala Arg Pro Lys Arg Trp Leu Leu Ile Ser Leu Gly Ser Gly Asp
145 150 155 160
Phe Leu Glu Asp Met Ile Gly Leu Lys Asp Ser Leu Phe Leu Ser Trp
165 170 175
Lys Glu Leu Ala Lys Leu Leu Gly Ala Asn Ile Leu Ile Tyr Asn Tyr
180 185 190
Pro Gly Val Lys Ser Ser Thr Gly Lys Leu Asn Leu Glu Asn Leu Ala
195 200 205
Thr Val Ile Ile Tyr Val Gln Ser Thr Tyr Lys Ile Lys Phe Arg Ala
210 215 220
Leu Gly Leu Thr Lys Ser Ser Pro Arg Ile Phe Leu Arg Arg Gly Ser
225 230 235 240
Pro Val Cys Ser Phe Ala Lys Asn Pro Phe Thr Asn Ser Glu Thr Ser
245 250 255
Trp Val Ala Val Lys Asp Arg Ala Pro His Ser Leu Pro Ala Ala Ala
260 265 270
Asn Ser Phe Phe Gly Pro Ile Gly Lys Leu Ile Ala Val Leu Ala Arg
275 280 285
Trp Lys Met Asp Ala Glu Lys Asn Ser Arg Glu Leu Pro Cys Pro Glu
290 295 300
Ile Leu Val Tyr Ser Ala Asp Arg Phe Arg Pro Ser Glu Val Gly Asp
305 310 315 320

PCT/IB98/01890

```
<210>1001
<211>369
<212>PRT
<213>Chlamydia pneumoniae
<400>1001
```

```
<210>1002
<211>160
<212>PRT
```

<213>Chlamydia pneumoniae

<400>1002

Asn Lys Met Ser Glu Leu Ala Pro Cys Ser Thr Gly Leu Gln Met Val
 1 5 10 15
 Pro His Thr Gln Val His His Ala Leu Asp Thr Arg Arg Val Ile Leu
 20 25 30
 Thr Ile Ala Ala Cys Leu Ser Leu Ile Ala Gly Ile Val Leu Val Gly
 35 40 45
 Leu Gly Ala Ala Ala Ile Leu Pro Ser Leu Phe Gly Val Ile Gly Gly
 50 55 60
 Met Ile Leu Ile Leu Phe Ser Ser Ile Ala Leu Ile Tyr Leu Tyr Lys
 65 70 75 80
 Lys Thr Arg Glu Val Asp Gln Ile Ala Leu Glu Pro Leu Pro Glu Met
 85 90 95
 Ile Ser Lys Asp Gln Ser Ile Ile Asp Phe Val Lys Thr Arg Asp Tyr
 100 105 110
 Ala Ser Leu Glu Lys Lys Ala Thr Phe Ala Tyr Thr His Thr His Tyr
 115 120 125
 Tyr Asp Gly Ser Met Val Phe Tyr Arg Glu Ile Pro Arg Phe Met Leu
 130 135 140
 Gly Ser Tyr Leu Ala Leu Arg Lys Asp Met Asp Arg Gln Ala Leu Phe
 145 150 155 160

<210>1003

<211>542

<212>PRT

<213>Chlamydia pneumoniae

<400>1003

Leu Gly Trp Lys Ser Asp Ile Tyr Thr Asn Ile Leu Glu Glu Arg Met
 1 5 10 15
 Thr Ala Arg Ala Glu Tyr Leu Asp His Glu Asp Phe Leu Tyr Arg Ser
 20 25 30
 His Lys Leu Gln Glu Leu Ser Glu Leu Gly Val Val Leu Tyr Pro Tyr
 35 40 45
 Glu Phe Pro Gly Val Phe Ser Cys Glu Asp Ile Lys Lys Thr Phe Ala
 50 55 60
 Ser Gln Glu Leu Gly Asn Ser Glu Ala Ala Met Ser Arg Ser Thr Pro
 65 70 75 80
 Arg Val Arg Phe Ala Gly Arg Leu Val Leu Phe Arg Ala Met Gly Lys
 85 90 95
 Asn Ala Phe Gly Gln Ile Leu Asp His Asn Gln Thr Ile Gln Val Met
 100 105 110
 Phe Asn Arg Glu Phe Thr Ser Val His Gly Leu Ser Glu Asp Ala Glu
 115 120 125
 Ile Thr Pro Ile Lys Phe Ile Glu Lys Lys Leu Asp Leu Gly Asp Ile
 130 135 140
 Leu Gly Ile Asp Gly Tyr Leu Phe Phe Thr His Ser Gly Glu Leu Thr
 145 150 155 160
 Val Leu Val Glu Thr Val Thr Leu Leu Cys Lys Ser Leu Leu Ser Leu
 165 170 175
 Pro Asp Lys His Ala Gly Leu Ser Asp Lys Glu Val Arg Tyr Arg Lys
 180 185 190
 Arg Trp Leu Asp Leu Ile Ser Ser Arg Glu Val Ser Asp Thr Phe Val
 195 200 205
 Lys Arg Ser Tyr Ile Ile Lys Leu Ile Arg Asn Tyr Met Asp Ala His
 210 215 220
 Gly Phe Leu Glu Val Glu Thr Pro Ile Leu Gln Asn Ile Tyr Gly Gly
 225 230 235 240
 Ala Glu Ala Lys Pro Phe Thr Thr Thr Met Glu Ala Leu His Ser Glu
 245 250 255
 Met Phe Leu Arg Ile Ser Leu Glu Ile Ala Leu Lys Lys Ile Leu Val
 260 265 270
 Gly Gly Ala Pro Arg Ile Tyr Glu Leu Gly Lys Val Phe Arg Asn Glu
 275 280 285
 Gly Ile Asp Arg Thr His Asn Pro Glu Phe Thr Met Ile Glu Ala Tyr

WO 99/27105

PCT/IB98/01890

290 295 300
Ala Ala Tyr Met Asp Tyr Lys Glu Val Met Val Phe Val Glu Asn Leu
305 310 315 320
Val Glu His Leu Val Arg Ala Val Asn His Asp Asn Thr Ser Leu Val
325 330 335
Tyr Ser Tyr Trp Lys His Gly Pro Gln Glu Val Asp Phe Lys Ala Pro
340 345 350
Trp Ile Arg Met Thr Met Lys Glu Ser Ile Ala Thr Tyr Ala Gly Ile
355 360 365
Asp Val Asp Val His Ser Asp Gln Lys Leu Lys Glu Ile Leu Lys Lys
370 375 380
Lys Thr Thr Phe Pro Glu Thr Ala Phe Ala Thr Ala Ser Arg Gly Met
385 390 395 400
Leu Ile Ala Ala Leu Phe Asp Glu Leu Val Ser Asp Asn Leu Ile Ala
405 410 415
Pro His His Ile Thr Asp His Pro Val Glu Thr Thr Pro Leu Cys Lys
420 425 430
Thr Leu Arg Ser Gly Asp Thr Ala Phe Val Glu Arg Phe Glu Ser Phe
435 440 445
Cys Leu Gly Lys Glu Leu Cys Asn Ala Tyr Ser Glu Leu Asn Asp Pro
450 455 460
Ile Arg Gln Arg Glu Leu Glu Gln Gln His Thr Lys Lys Glu Leu
465 470 475 480
Leu Pro Asp Ser Glu Cys His Pro Ile Asp Glu Glu Phe Leu Glu Ala
485 490 495
Leu Cys Gln Gly Met Pro Pro Ala Gly Gly Phe Gly Ile Gly Val Asp
500 505 510
Arg Leu Val Met Ile Leu Thr Asn Ala Ala Ser Ile Arg Asp Val Leu
515 520 525
Tyr Phe Pro Val Met Arg Arg Phe Asp Ala Glu Lys Thr Asn
530 535 540
<210>1004
<211>308
<212>PRT
<213>Chlamydia pneumoniae
<400>1004
Val Ala Tyr Ala Ala Ala Pro Glu Phe Leu Leu Met Ser Met Thr Lys
1 5 10 15
Lys Thr Gln Val Ile Leu Tyr Cys Gly Lys His Thr Ile Gln Asn Val
20 25 30
Met Ala Ser Phe Ile Gly Lys Val Leu Ser Gly Ile Gly Arg Pro Gly
35 40 45
Trp His Leu Glu Cys Ser Ile Met Ala Met Glu Leu Leu Gly Asp Ser
50 55 60
Leu Asp Ile His Ala Gly Gly Val Asp Asn Ile Phe Pro His His Glu
65 70 75 80
Asn Glu Ile Ala Gln Ser Glu Ala Leu Ser Gly Lys Pro Phe Ala Arg
85 90 95
Tyr Trp Leu His Ser Glu His Leu Leu Ile Asp Gly Lys Lys Met Ser
100 105 110
Lys Ser Leu Gly Asn Phe Leu Thr Leu Arg Asp Leu Leu His Gln Glu
115 120 125
Phe Thr Gly Gln Glu Val Arg Tyr Met Leu Leu Gln Ser His Tyr Arg
130 135 140
Thr Gln Leu Asn Phe Thr Glu Glu Ala Leu Leu Ala Cys Arg His Ala
145 150 155 160
Leu Arg Arg Leu Lys Asp Phe Val Ser Arg Leu Glu Gly Val Asp Leu
165 170 175
Pro Gly Glu Ser Pro Leu Pro Arg Thr Leu Asp Ser Ser Ser Gln Phe
180 185 190
Ile Glu Ala Phe Ser Arg Ala Leu Ala Asn Asp Leu Asn Val Ser Thr
195 200 205
Gly Phe Ala Ser Leu Phe Asp Phe Val His Glu Ile Asn Thr Leu Ile
210 215 220

WO 99/27105

PCT/IB98/01890

Asp Gln Gly His Phe Ser Lys Ala Asp Ser Leu Tyr Ile Leu Asp Thr
 225 230 235 240
 Leu Lys Lys Val Asp Thr Val Leu Gly Val Leu Pro Leu Thr Thr Ser
 245 250 255
 Val Cys Ile Pro Glu Thr Val Met Gln Leu Val Ala Glu Arg Glu Glu
 260 265 270
 Ala Arg Lys Thr Lys Asn Trp Ala Met Ala Asp Thr Leu Arg Asp Glu
 275 280 285
 Ile Leu Ala Ala Gly Phe Leu Val Glu Asp Ser Lys Ser Gly Pro Lys
 290 295 300
 Val Lys Pro Leu
 305

<210>1005

<211>232

<212>PRT

<213>Chlamydia pneumoniae

<400>1005

Gly Leu Tyr Phe Tyr Asn Thr Ala Ser Gln Lys Lys Glu Leu Phe Phe
 1 5 10 15
 Pro Asn His Thr Pro Val Arg Leu Tyr Thr Cys Gly Pro Thr Val Tyr
 20 25 30
 Asp Tyr Ala His Ile Gly Asn Phe Arg Thr Tyr Val Phe Glu Asp Ile
 35 40 45
 Leu Lys Arg Thr Leu Val Phe Phe Gly Tyr Ser Val Thr His Val Met
 50 55 60
 Asn Ile Thr Asp Val Glu Asp Lys Thr Ile Ala Gly Ala Ser Lys Lys
 65 70 75 80
 Asn Ile Pro Leu Gln Glu Tyr Thr Gln Pro Tyr Thr Glu Ala Phe Phe
 85 90 95
 Glu Asp Leu Asp Thr Leu Asn Ile Ala Arg Ala Asp Phe Tyr Pro His
 100 105 110
 Ala Thr His Tyr Ile Pro Gln Met Ile Gln Ala Ile Thr Lys Leu Leu
 115 120 125
 Glu Gln Gly Ile Ala Tyr Ile Gly Gln Asp Ala Ser Val Tyr Phe Ser
 130 135 140
 Leu Asn Arg Phe Pro Asn Tyr Gly Lys Leu Ser His Leu Asp Leu Ser
 145 150 155 160
 Ser Leu Arg Cys Cys Ser Arg Ile Ser Ala Asp Glu Tyr Asp Lys Glu
 165 170 175
 Asn Pro Ser Asp Phe Val Leu Trp Lys Ala Tyr Asn Pro Glu Arg Asp
 180 185 190
 Gly Val Ile Tyr Trp Glu Ser Pro Phe Gly Asn Arg Lys Thr Trp Met
 195 200 205
 Ala Phe Arg Met Phe Asp Tyr Gly Asp Gly Thr Ser Trp Arg Phe Phe
 210 215 220
 Gly Tyr Pro Cys Gly Arg Cys Arg
 225 230

<210>1006

<211>242

<212>PRT

<213>Chlamydia pneumoniae

<400>1006

Thr Ala Val Glu Asn Ile Arg Gln Gln Asn Leu Ala Leu Lys Ser Lys
 1 5 10 15
 Phe Lys Ile Asn Glu Leu Pro Cys Met Ile Leu Leu Ser His Glu Glu
 20 25 30
 Arg Glu Ile Tyr Arg Ile Gly Ser Phe Gly Asn Glu Thr Gly Ser Asn
 35 40 45
 Leu Gly Asp Ser Leu Cys His Ile Val Glu Ser Asp Ser Leu Leu Arg
 50 55 60
 Arg Ala Phe Pro Met Met Thr Ser Leu Ser Leu Ser Glu Leu Gln Arg
 65 70 75 80
 Tyr Tyr Arg Leu Ala Glu Glu Leu Ser His Lys Glu Phe Leu Lys His
 85 90 95

Ala Leu Glu Leu Gly Val Arg Ser Asp Asp Tyr Phe Phe Leu Ser Glu
 100 105 110
 Lys Phe Arg Leu Leu Val Glu Val Gly Lys Met Asp Ser Glu Glu Cys
 115 120 125
 Gln Arg Ile Lys Lys Arg Leu Asn Lys Asp Pro Lys Asn Glu Lys
 130 135 140
 Gln Thr His Phe Thr Val Ala Leu Ile Glu Phe Gln Glu Leu Ala Lys
 145 150 155 160
 Arg Ser Arg Ala Gly Val Arg Gln Asp Ala Ser Gln Val Ile Ala Pro
 165 170 175
 Leu Glu Ser Tyr Ile Ser Gln Phe Gly Gln Gln Asp Lys Asp Asn Leu
 180 185 190
 Trp Arg Val Glu Met Met Ile Ala Gln Phe Tyr Leu Asp Ser Asp Gln
 195 200 205
 Trp His His Ala Leu Gln His Ala Glu Val Ala Phe Glu Ala Ala Pro
 210 215 220
 Asn Glu Val Arg Ser His Ile Ser Arg Ser Leu Glu Tyr Ile Arg His
 225 230 235 240
 Gln Ser

<210>1007

<211>139

<212>PRT

<213>Chlamydia pneumoniae

<400>1007

Val His Pro Leu Thr Leu Pro Lys Gln Ser Arg Val Leu Lys Arg Lys
 1 5 10 15
 Gln Phe Leu Tyr Ile Thr Arg Ser Gly Phe Cys Cys Arg Gly Ser Gln
 20 25 30
 Ala Thr Phe Tyr Val Val Pro Ser Arg His Pro Gly Thr Cys Arg Met
 35 40 45
 Gly Ile Thr Val Ser Lys Lys Phe Gly Lys Ala His Glu Arg Xaa Ser
 50 55 60
 Phe Lys Arg Val Val Arg Glu Val Phe Arg His Val Arg His Gln Leu
 65 70 75 80
 Pro Asn Cys Gln Ile Val Val Phe Pro Lys Gly His Lys Gln Arg Pro
 85 90 95
 Val Phe Ser Lys Leu Leu Gln Asp Phe Ile Asn Gln Ile Pro Glu Gly
 100 105 110
 Leu His Arg Leu Gly Lys Thr Lys Ala Thr Thr Gly Gly Glu Cys Thr
 115 120 125
 Pro Lys Ser Glu Lys Cys Val Thr Ala Pro Arg
 130 135

<210>1008

<211>101

<212>PRT

<213>Chlamydia pneumoniae

<400>1008

Met Ala Lys Lys Ser Ser Val Ala Arg Glu Ala Lys Arg Arg Arg Leu
 1 5 10 15
 Val Glu Ala Asn Phe Lys Lys Arg Ser Asp Leu Arg Lys Ile Val Lys
 20 25 30
 Ser Leu Ser Val Ser Glu Glu Glu Lys Glu Asn Ala Arg Ile Ser Leu
 35 40 45
 Asn Lys Met Lys Arg Asp Thr Ser Pro Thr Arg Leu His Asn Arg Cys
 50 55 60
 Leu Leu Thr Gly Arg Pro Arg Gly Tyr Leu Arg Lys Phe Ala Ile Ser
 65 70 75 80
 Arg Ile Cys Phe Arg Gln Met Ala Ser Met Gly Glu Ile Pro Gly Val
 85 90 95
 Ile Lys Ala Ser Trp
 100

<210>1009

<211>169

<212>PRT

<213>Chlamydia pneumoniae

<400>1009

Gln Thr Ile Asn Leu Ser Gly Thr Leu Arg Thr Met Leu Pro Ile Ser
 1 5 10 15
 Ile Leu Leu Phe Tyr Val Ile Leu Gly Cys Leu Ser Ala Tyr Ile Ala
 20 25 30
 Asp Lys Lys Lys Arg Asn Val Ile Gly Trp Phe Phe Ala Gly Ala Phe
 35 40 45
 Phe Gly Phe Ile Gly Leu Val Val Leu Leu Leu Leu Pro Ser Arg Arg
 50 55 60
 Asn Ala Leu Glu Lys Pro Gln Asn Asp Pro Phe Asp Asn Ser Asp Leu
 65 70 75 80
 Phe Asp Asp Leu Lys Lys Ser Leu Ala Gly Asn Asp Glu Ile Pro Ser
 85 90 95
 Ser Gly Asp Leu Gln Glu Ile Val Ile Asp Thr Glu Lys Trp Phe Tyr
 100 105 110
 Leu Asn Lys Asp Arg Glu Asn Val Gly Pro Ile Ser Phe Glu Glu Leu
 115 120 125
 Val Val Leu Leu Lys Gly Lys Thr Tyr Pro Glu Glu Ile Trp Val Trp
 130 135 140
 Lys Lys Gly Met Lys Asp Trp Gln Arg Val Lys Asp Val Pro Ser Leu
 145 150 155 160
 Gln Gln Ala Leu Lys Glu Ala Ser Lys
 165

<210>1010

<211>189

<212>PRT

<213>Chlamydia pneumoniae

<400>1010

His Ile Asn Arg Trp Thr Ile Arg Leu Ser Leu Thr Leu Ile Ile Ser
 1 5 10 15
 Thr Val Leu Tyr Phe Phe Ser Glu Glu Ile Glu Leu Ile Gly Gly Gly
 20 25 30
 Lys Met Glu Lys Gln Asn Leu Lys Leu Asp Val Lys Glu Ile Glu Phe
 35 40 45
 Pro Glu Thr Val Phe Ser Arg Asp Ile Glu Thr Arg Val Ile Gln Val
 50 55 60
 Ile Ile Leu His Cys Leu Ala Lys Ile Asn Gly Val Ser Leu Leu Gly
 65 70 75 80
 Gly Asn Leu Ile Asp Ala Leu Phe Gly Arg Asp Ile Glu Arg Met Lys
 85 90 95
 Gly Ile Tyr Val Glu Gln Asp Ser Lys Asn His Leu Val Lys Val Arg
 100 105 110
 Val Glu Val Asn Val Asp Tyr Gly Val Ser Ile Pro Glu Lys Thr Glu
 115 120 125
 Glu Ile Gln Gly Cys Ile Val Ser Glu Ile Ser Glu Tyr Thr Gly Leu
 130 135 140
 His Val Ala Ala Val His Val Ile Ile Lys Gly Leu Thr Gln Pro Lys
 145 150 155 160
 Asp Arg Ile Asp Glu Glu Ile Glu Glu Glu Val Ser Val Gln Asp Leu
 165 170 175
 Pro Ser Pro Glu Asp Phe Leu Leu Glu Asn Ser Glu Gly
 180 185

<210>1011

<211>603

<212>PRT

<213>Chlamydia pneumoniae

<400>1011

Met Arg Ile Glu Asp Phe Ser Leu Lys Leu Ile Pro Ser Ser Pro Gly
 1 5 10 15
 Val Tyr Leu Met Lys Asp Val His Asp Gln Val Leu Tyr Ile Gly Lys
 20 25 30
 Ala Lys Asn Leu Lys Asn Arg Leu Ala Ser Tyr Phe His Glu Lys Gly

PCT/DK98/01890

1037

PCT/IB98/01890

1038

WO 99/27105

PCT/IB98/01890

His Tyr Lys Glu Leu Thr Thr Leu Glu Asp His Cys Pro His Val Glu
 420 425 430
 Asn Phe His Ala Gly Val Lys Asp Lys Ala Gly Gln Pro Val Phe Leu
 435 440 445
 Tyr Glu Ile Leu Lys Asp Ile His Lys Lys Val Ser Ala Phe Met Ser
 450 455 460
 Pro Gly Leu Leu Ala Phe Pro Phe Val Trp Tyr Arg Glu Leu Ser Arg
 465 470 475 480
 Ser

<210>1013

<211>339

<212>PRT

<213>Chlamydia pneumoniae

<400>1013

Val Met Thr Glu Lys Lys Pro Thr Pro Met Met Glu Gln Trp His Gln
 1 5 10 15
 Cys Lys Glu Lys Ala Gly Asp Ser Val Leu Leu Phe Arg Met Gly Asp
 20 25 30
 Phe Tyr Glu Ala Phe Tyr Asp Asp Ala Val Leu Leu Ser Gln His Leu
 35 40 45
 Glu Leu Thr Leu Thr Gln Arg Gln Gly Ile Pro Met Ser Gly Ile Pro
 50 55 60
 Val Ser Thr Val Asp Thr Tyr Val Asp Arg Leu Ile Gly Lys Gly Phe
 65 70 75 80
 Lys Val Ala Val Ala Glu Gln Phe Gly Glu Pro Ala Lys Glu Lys Glu
 85 90 95
 Ser Lys Lys Ile Gly Pro Met Ala Arg Asp Ile Gln Arg Phe Val Thr
 100 105 110
 Pro Gly Thr Leu Leu Ser Ser Thr Leu Leu Gln Glu Lys Phe Asn Asn
 115 120 125
 Xaa Ile Val Ala Ile Thr Arg Ile Gly Ser Leu Phe Gly Phe Ala Cys
 130 135 140
 Leu Asp Leu Ser Thr Gly Ser Phe Phe Ile Glu Glu Cys Glu Asn Thr
 145 150 155 160
 Lys Glu Leu Val Asp Glu Ile Cys Arg Leu Ala Pro Ser Glu Val Leu
 165 170 175
 Ser Cys Asn Lys Phe Tyr Asn Lys Glu Thr Ala Ile Val Met Gln Leu
 180 185 190
 Gln Gln His Leu Lys Leu Thr Leu Ser Thr Tyr Ala Asp Trp Ala Phe
 195 200 205
 Glu His Lys Phe Ala Ser Gln Lys Leu Thr Thr His Phe Gln Val Ala
 210 215 220
 Ser Leu Asp Gly Phe Gly Leu Lys Gly Leu Val Pro Ala Ile Asn Ala
 225 230 235 240
 Ala Gly Gly Leu Leu Ser Tyr Ile Gln Asp Lys Leu Leu Leu Pro Thr
 245 250 255
 Lys His Ile Ala Ile Pro Gln Thr Arg Gly Lys Gln Gln Lys Leu Leu
 260 265 270
 Ile Asp Thr Ala Ser Gln Val Asn Leu Glu Leu Leu Ala Pro Leu Asn
 275 280 285
 Asp Pro Gln Gly Lys Asn Ser Leu Leu Arg Ile Met Asp His Thr Ser
 290 295 300
 Thr Pro Met Gly Gly Arg Leu Leu Arg Gln Ile Leu Ile Ser Pro Phe
 305 310 315 320
 Tyr Asn Pro Lys Glu Ile Leu Val Arg Gln Asp Ala Val Glu Phe Phe
 325 330 335
 Phe Gly Lys

<210>1014

<211>207

<212>PRT

<213>Chlamydia pneumoniae

<400>1014

Leu Arg Thr Ala Met Tyr Thr Glu Glu Ser Leu Asp Asn Leu Arg His
 1 5 10 15
 Ser Ile Asp Ile Val Asp Val Leu Ser Glu His Ile His Leu Lys Arg
 20 25 30
 Ser Gly Ala Thr Tyr Lys Ala Cys Cys Pro Phe His Thr Glu Lys Thr
 35 40 45
 Pro Ser Phe Ile Val Asn Pro Ala Gly Ala His Tyr His Cys Phe Gly
 50 55 60
 Cys Gly Ala His Gly Asp Ala Ile Gly Phe Leu Met Gln His Leu Gly
 65 70 75 80
 Tyr Ser Phe Thr Glu Ala Ile Leu Val Leu Ser Lys Lys Phe Gln Val
 85 90 95
 Asp Leu Val Leu Gln Pro Lys Asp Ser Gly Tyr Thr Pro Pro Gln Gly
 100 105 110
 Leu Lys Glu Glu Leu Arg His Ile Asn Ser Glu Ala Glu Thr Phe Phe
 115 120 125
 Arg Tyr Cys Leu Tyr His Leu Pro Glu Ala Arg His Ala Leu Gln Tyr
 130 135 140
 Leu Tyr His Arg Gly Phe Ser Pro Asp Thr Ile Asp Arg Phe His Leu
 145 150 155 160
 Gly Tyr Gly Pro Glu Gln Ser Leu Phe Leu Gln Ala Met Glu Glu Arg
 165 170 175
 Lys Ile Ser Gln Glu Gln Leu His Thr Ala Gly Phe Phe Gly Asn Lys
 180 185 190
 Trp Phe Leu Phe Ala Arg Arg Ile Ser Phe Leu Ser Thr Met Arg
 195 200 205

<210>1015

<211>402

<212>PRT

<213>Chlamydia pneumoniae

<400>1015

Met Val Phe Val Cys Thr Lys Asn Leu Phe Pro Val His Asp Ala Leu
 1 5 10 15
 Gly His Thr Ile Gly Phe Ser Ala Arg Lys Phe Leu Glu Asn Ser Gln
 20 25 30
 Gly Gly Lys Tyr Val Asn Thr Pro Glu Thr Pro Ile Phe Lys Lys Ser
 35 40 45
 Arg Ile Leu Phe Gly Leu Asn Phe Ser Arg Arg Arg Ile Ala Lys Glu
 50 55 60
 Xaa Lys Val Ile Leu Val Glu Gly Gln Ala Asp Cys Leu Gln Met Ile
 65 70 75 80
 Asp Ser Gly Phe Asn Cys Thr Val Ala Ala Gln Gly Thr Ala Phe Thr
 85 90 95
 Glu Glu His Val Lys Glu Leu Ser Lys Leu Gly Val Leu Lys Val Phe
 100 105 110
 Leu Leu Phe Asp Ser Asp Glu Ala Gly Asn Lys Ala Ala Leu Arg Val
 115 120 125
 Gly Asp Leu Cys Gln Thr Ala Gln Met Ser Val Phe Val Cys Lys Leu
 130 135 140
 Pro Gln Gly His Asp Pro Asp Ser Phe Leu Met Gln Arg Gly Ser Ser
 145 150 155 160
 Gly Leu Ile Ala Leu Leu Glu Gln Ser Gln Asp Tyr Leu Thr Phe Leu
 165 170 175
 Ile Ser Glu Lys Met Ser Ser Tyr Pro Lys Phe Gly Pro Arg Glu Lys
 180 185 190
 Ala Leu Leu Val Glu Glu Ala Ile Arg Gln Ile Lys His Trp Gly Ser
 195 200 205
 Pro Ile Leu Val Tyr Glu His Leu Lys Gln Leu Ala Ser Leu Met Met
 210 215 220
 Val Pro Glu Asp Met Val Leu Ser Leu Ala Asn Pro Gln Val Thr Ala
 225 230 235 240
 Glu Pro Gln Asn Ile Pro Ile Lys Gln Lys Val Pro Lys Ile His Pro
 245 250 255
 His Ile Val Met Glu Thr Asp Ile Leu Arg Cys Met Leu Phe Cys Gly

PCT/DK98/01890

```

<210>1016
<211>120
<212>PRT
<213>Chlamydia pneumoniae
<400>1016
Ile Lys Ile Met Met His Arg Tyr Phe Ile Pro Leu Leu Ala Leu Leu
  1             5             10             15
Ile Phe Ser Pro Ser Leu Val Arg Ala Glu Leu Gln Pro Ser Glu Asn
             20             25             30
Arg Lys Gly Gly Trp Pro Thr Gln Leu Ser Cys Ala Glu Gly Ser Gln
             35             40             45
Leu Phe Cys Lys Phe Glu Ala Ala Tyr Asn Asn Ala Ile Glu Glu Gly
             50             55             60
Lys Pro Gly Ile Leu Val Phe Phe Ser Glu Arg Pro Thr Pro Glu Phe
             65             70             75             80
Ala Asp Leu Thr Asn Gly Ser Phe Ser Leu Ser Thr Pro Ile Ala Lys
             85             90             95
Gly Phe Asn Val Val Val Leu Cys Pro Gly Leu Ile Ser Pro Leu Asp
             100             105             110
Phe Phe His Gln Asn Gly Ile Leu
             115             120

```

1041

WO 99/27105

PCT/IB98/01890

145 150 155 160
Glu Ser Phe Pro Thr Gly Leu Ser Ile Ile Val Val Gly Val Thr Pro
165 170 175
Glu Gly Pro Gly Asp Ile Ile Glu Val Ser Pro Val Ser Leu Thr Val
180 185 190
Glu Glu Glu Glu Thr Leu Pro Ser Glu Gln Thr Thr Glu Val Glu Ser
195 200 205
Thr Ser Glu Leu Gln Ser Glu Asp Pro Ala Ile Ala
210 215 220
<210>1018
<211>1014
<212>PRT
<213>Chlamydia pneumoniae
<400>1018
Leu Glu Ser Phe Val Ser Glu His Pro Leu Thr Leu Gln Ser Met Ile
1 5 10 15
Ala Thr Ile Leu Arg Phe Trp Ser Glu Gln Gly Cys Val Ile His Gln
20 25 30
Gly Tyr Asp Leu Glu Val Gly Ala Gly Thr Phe Asn Pro Ala Thr Phe
35 40 45
Leu Arg Ala Leu Gly Pro Glu Pro Tyr Lys Ala Ala Tyr Val Glu Pro
50 55 60
Ser Arg Arg Pro Gln Asp Gly Arg Tyr Gly Val His Pro Asn Arg Leu
65 70 75 80
Gln Asn Tyr His Gln Leu Gln Val Ile Leu Lys Pro Val Pro Glu Asn
85 90 95
Phe Leu Ser Leu Tyr Thr Glu Ser Leu Arg Ala Ile Gly Leu Asp Leu
100 105 110
Arg Asp His Asp Ile Arg Phe Ile His Asp Asp Trp Glu Asn Pro Thr
115 120 125
Ile Gly Ala Trp Gly Leu Gly Trp Glu Val Trp Leu Asn Gly Met Glu
130 135 140
Ile Thr Gln Leu Thr Tyr Phe Gln Ala Ile Gly Ser Lys Pro Leu Asp
145 150 155 160
Thr Ile Ser Gly Glu Ile Thr Tyr Gly Ile Glu Arg Ile Ala Met Tyr
165 170 175
Leu Gln Lys Lys Thr Ser Ile Tyr Asp Val Leu Trp Asn Asp Thr Leu
180 185 190
Thr Tyr Gly Gln Ile Thr Gln Ala Ser Glu Lys Ala Trp Ser Glu Tyr
195 200 205
Asn Phe Asp Tyr Ala Asn Thr Glu Met Trp Phe Lys His Phe Glu Asp
210 215 220
Phe Ala Glu Glu Ala Leu Arg Thr Leu Lys Asn Gly Leu Ser Val Pro
225 230 235 240
Ala Tyr Asp Phe Val Ile Lys Ala Ser His Ala Phe Asn Ile Leu Asp
245 250 255
Ala Arg Gly Thr Ile Ser Val Thr Glu Arg Thr Arg Tyr Ile Ala Arg
260 265 270
Ile Arg Gln Leu Thr Arg Leu Val Ala Asp Ser Tyr Val Glu Trp Arg
275 280 285
Ala Ser Leu Asn Tyr Pro Leu Leu Ser Leu Ser Ser Thr Ser Glu Pro
290 295 300
Lys Glu Thr Ser Glu Ser Val Val Pro Met Ile Ser Ser Thr Glu Asp
305 310 315 320
Leu Leu Leu Glu Ile Gly Ser Glu Glu Leu Pro Ala Thr Phe Val Pro
325 330 335
Ile Gly Ile Gln Gln Leu Glu Ser Leu Ala Arg Gln Val Leu Thr Asp
340 345 350
His Asn Ile Val Tyr Glu Gly Leu Glu Val Leu Gly Ser Pro Arg Arg
355 360 365
Leu Ala Leu Leu Val Lys Asn Val Ala Pro Glu Val Val Gln Lys Ala
370 375 380
Phe Glu Lys Lys Gly Pro Met Leu Thr Ser Leu Phe Ser Pro Asp Gly
385 390 395 400

Asp Val Ser Pro Gln Gly Gln Gln Phe Phe Ala Ser Gln Gly Val Asp
 405 410 415
 Ile Ser His Tyr Gln Asp Leu Ser Arg His Ala Ser Leu Ala Ile Arg
 420 425 430
 Thr Val Asn Gly Ser Glu Tyr Leu Phe Leu Leu His Pro Glu Ile Arg
 435 440 445
 Leu Arg Thr Ala Asp Ile Leu Met Gln Glu Leu Pro Leu Leu Ile Gln
 450 455 460
 Arg Met Lys Phe Pro Lys Lys Met Val Trp Asp Asn Ser Gly Val Glu
 465 470 475 480
 Tyr Ala Arg Pro Ile Arg Trp Leu Val Ala Leu Tyr Gly Glu His Ile
 485 490 495
 Leu Pro Ile Thr Leu Gly Thr Ile Ile Ala Ser Arg Asn Ser Phe Gly
 500 505 510
 His Arg Gln Leu Asp Pro Arg Lys Ile Ser Ile Ser Ser Pro Gln Asp
 515 520 525
 Tyr Val Glu Thr Leu Arg Gln Ala Cys Val Val Ser Gln Lys Glu
 530 535 540
 Arg Arg Met Ile Ile Glu Gln Gly Leu Arg Ala His Ser Ser Asp Thr
 545 550 555 560
 Ile Ser Ala Ile Pro Leu Pro Arg Leu Ile Glu Glu Ala Thr Phe Leu
 565 570 575
 Ser Glu His Pro Phe Val Ser Cys Gly Gln Phe Ser Glu Gln Phe Cys
 580 585 590
 Ala Leu Pro Lys Glu Leu Leu Ile Ala Glu Met Val Asn His Gln Lys
 595 600 605
 Tyr Phe Pro Thr His Glu Thr Ser Ser Gly Ala Ile Ser Asn Phe Phe
 610 615 620
 Ile Val Val Cys Asp Asn Ser Pro Asn Asp Thr Ile Ile Glu Gly Asn
 625 630 635 640
 Glu Lys Ala Leu Thr Pro Arg Leu Thr Asp Gly Glu Phe Leu Phe Lys
 645 650 655
 Gln Asp Leu Gln Thr Pro Leu Thr Thr Phe Ile Glu Lys Leu Lys Ser
 660 665 670
 Val Thr Tyr Phe Glu Ala Leu Gly Ser Leu Tyr Asp Lys Val Glu Arg
 675 680 685
 Leu Lys Ala His Gln Arg Val Phe Ser Thr Phe Ser Ser Leu Ala Ala
 690 695 700
 Ser Glu Asp Leu Asp Ile Ala Ile Gln Tyr Cys Lys Ala Asp Leu Val
 705 710 715 720
 Ser Ala Val Val Asn Glu Phe Pro Glu Leu Gln Gly Ile Met Gly Glu
 725 730 735
 Tyr Tyr Leu Lys His Ala Asn Leu Pro Thr Ala Ser Ala Val Ala Val
 740 745 750
 Gly Glu His Leu Arg His Ile Thr Met Gly Gln Lys Leu Ser Thr Ile
 755 760 765
 Gly Thr Leu Leu Ser Leu Leu Asp Arg Leu Asp Asn Leu Leu Ala Cys
 770 775 780
 Phe Ile Leu Gly Leu Lys Pro Thr Ser Ser His Asp Pro Tyr Ala Leu
 785 790 795 800
 Arg Arg Gln Ser Leu Glu Val Leu Thr Leu Val Ser Ala Ser Arg Leu
 805 810 815
 Pro Ile Asp Leu Ala Ser Leu Leu Asp Arg Leu Ala Asp His Phe Pro
 820 825 830
 Ser Thr Ile Glu Glu Lys Val Trp Asp Lys Ser Lys Thr Ile His Glu
 835 840 845
 Ile Leu Glu Phe Ile Trp Gly Arg Leu Lys Thr Phe Met Gly Ser Leu
 850 855 860
 Glu Phe Arg Lys Asp Glu Ile Ala Ala Val Leu Ile Asp Ser Ala Thr
 865 870 875 880
 Xaa Asn Pro Ile Glu Ile Leu Asp Thr Ala Glu Ala Leu Gln Leu Leu
 885 890 895
 Lys Glu Glu His Thr Glu Lys Leu Ala Val Ile Thr Thr Thr His Asn
 900 905 910

WO 99/27105

PCT/IB98/01890

Arg Leu Lys Lys Ile Leu Ser Ser Leu Lys Leu Ser Met Thr Ser Ser
 915 920 925
 Pro Ile Glu Val Leu Gly Asp Arg Glu Ser Asn Phe Lys Gln Val Leu
 930 935 940
 Asp Ala Phe Pro Gly Phe Pro Lys Glu Thr Ser Ala His Ala Phe Leu
 945 950 955 960
 Glu Tyr Phe Leu Ser Leu Ala Asp Leu Ser Asn Asp Ile Gln Asp Phe
 965 970 975
 Leu Asn Thr Val His Ile Ala Asn Asp Asp Gly Ala Ile Arg Asn Leu
 980 985 990
 Arg Ile Ser Leu Leu Leu Thr Ala Met Asp Lys Phe Ser Leu Cys His
 995 1000 1005
 Trp Glu Ser Val Ala Val
 1010

<210>1019

<211>97

<212>PRT

<213>Chlamydia pneumoniae

<400>1019

Asn Gly Asn Asp Val Leu Lys Thr Cys Ser Leu Ile Leu Leu Asn Leu
 1 5 10 15
 Cys Arg Tyr Phe Leu Leu Val Phe Cys Thr Ala Val Phe Phe Lys Arg
 20 25 30
 Tyr Ile Leu Ile Leu Thr Arg Thr Val Arg His Thr Glu Ile Tyr Ala
 35 40 45
 Cys Gly Glu Gly Val Thr Val Ala Leu Lys Ser Met Leu Pro Ser Met
 50 55 60
 Lys Gln Glu Ser Pro Ala Leu Ala Lys Glu Asn Val Lys Arg Lys Asn
 65 70 75 80
 Val Ile Pro Trp Ser His Leu Cys Gln Asn Ile Pro Ser Pro Tyr Ser
 85 90 95
 Leu

<210>1020

<211>207

<212>PRT

<213>Chlamydia pneumoniae

<400>1020

Arg Val Gly Leu Pro Asn Tyr Ile Thr Phe Ser Arg Leu Phe Ile Thr
 1 5 10 15
 Pro Ile Phe Met Ile Leu Tyr Leu Lys Gly Lys Trp Phe Gly Ile Thr
 20 25 30
 Pro Val Val Leu Pro Tyr Val Leu Leu Ala Leu Leu Ala Ile Ser Glu
 35 40 45
 Leu Thr Asp Ala Ile Asp Gly Tyr Val Ala Arg Lys Phe Ser Gln Val
 50 55 60
 Thr Asp Leu Gly Lys Leu Leu Asp Pro Met Ala Asp Ser Ile Tyr Arg
 65 70 75 80
 Ile Ser Ile Tyr Leu Thr Phe Thr Gln Pro Pro Val Asn Leu Pro Leu
 85 90 95
 Leu Leu Val Phe Ile Phe Leu Ala Arg Asp Ser Val Ile Ser Thr Leu
 100 105 110
 Arg Thr Val Cys Ala Phe Arg Gly Arg Val Val Ala Ala Arg Ala Ser
 115 120 125
 Gly Lys Leu Lys Ala Ile Leu Gln Gly Val Ser Phe Phe Leu Ile Leu
 130 135 140
 Leu Val Met Ile Pro His Ser Leu Gly Leu Leu Ser Gln Asn Gly Leu
 145 150 155 160
 Glu Ile Phe Ala Ser Val Thr Val Ser Ile Ile Ala Val Tyr Ser Ile
 165 170 175
 Ala Ser Gly Ile Glu Tyr Phe Trp Met Asn Lys Asn Phe Leu Ser Gln
 180 185 190
 Arg Ala Lys Thr Lys Asp Ser Glu Lys Asn His Glu Ser Lys Asp
 195 200 205

<210>1021

<211>476

<212>PRT

<213>Chlamydia pneumoniae

<400>1021

```

Met Arg Ile Val Gln Val Ala Val Glu Phe Thr Pro Ile Val Lys Val
  1           5           10           15
Gly Gly Leu Gly Asp Ala Val Ala Ser Leu Ser Lys Glu Leu Ala Lys
      20           25           30
Gln Asn Asp Val Glu Val Leu Leu Pro His Tyr Pro Leu Ile Ser Lys
      35           40           45
Phe Ser Ser Ser Gln Val Leu Ser Glu Arg Ser Phe Tyr Tyr Glu Phe
      50           55           60
Leu Gly Lys Gln Gln Ala Ser Ala Ile Ser Tyr Ser Tyr Glu Gly Leu
      65           70           75           80
Thr Leu Thr Ile Ile Thr Leu Asp Ser Gln Ile Glu Leu Phe Ser Thr
      85           90           95
Thr Ser Val Tyr Ser Glu Asn Asn Val Val Arg Phe Ser Ala Phe Ala
      100          105          110
Ala Ala Ala Ala Tyr Leu Gln Glu Ala Asp Pro Ala Asp Ile Val
      115          120          125
His Leu His Asp Trp His Val Gly Leu Leu Ala Gly Leu Leu Lys Asn
      130          135          140
Pro Leu Asn Pro Val His Ser Lys Ile Val Phe Thr Ile His Asn Phe
      145          150          155          160
Gly Tyr Arg Gly Tyr Cys Ser Thr Gln Leu Ala Ala Ser Gln Ile
      165          170          175
Asp Asp Phe His Leu Ser His Tyr Gln Leu Phe Arg Asp Pro Gln Thr
      180          185          190
Ser Val Leu Met Lys Gly Ala Leu Tyr Cys Ser Asp Tyr Ile Thr Thr
      195          200          205
Val Ser Leu Thr Tyr Val Gln Glu Ile Ile Asn Asp Tyr Ser Asp Tyr
      210          215          220
Glu Leu His Asp Ala Ile Leu Ala Arg Asn Ser Val Phe Ser Gly Ile
      225          230          235          240
Ile Asn Gly Ile Asp Glu Asp Val Trp Asn Pro Lys Thr Asp Pro Ala
      245          250          255
Leu Ala Val Gln Tyr Asp Ala Ser Leu Leu Ser Glu Pro Asp Val Leu
      260          265          270
Phe Thr Lys Lys Glu Glu Asn Arg Ala Val Leu Tyr Glu Lys Leu Gly
      275          280          285
Ile Ser Ser Asp Tyr Phe Pro Leu Ile Cys Val Ile Ser Arg Ile Val
      290          295          300
Glu Glu Lys Gly Pro Glu Phe Met Lys Glu Ile Ile Leu His Ala Met
      305          310          315          320
Glu His Ser Tyr Ala Phe Ile Leu Ile Gly Thr Ser Gln Asn Glu Val
      325          330          335
Leu Leu Asn Glu Phe Arg Asn Leu Gln Asp Cys Leu Ala Ser Ser Pro
      340          345          350
Asn Ile Arg Leu Ile Leu Asp Phe Asn Asp Pro Leu Ala Arg Leu Thr
      355          360          365
Tyr Ala Ala Ala Asp Met Ile Cys Ile Pro Ser His Arg Glu Ala Cys
      370          375          380
Gly Leu Thr Gln Leu Ile Ala Met Arg Tyr Gly Thr Val Pro Leu Val
      385          390          395          400
Arg Lys Thr Gly Gly Leu Ala Asp Thr Val Ile Pro Gly Val Asn Gly
      405          410          415
Phe Thr Phe Phe Asp Thr Asn Asn Phe Asn Glu Phe Arg Ala Met Leu
      420          425          430
Ser Asn Ala Val Thr Thr Tyr Arg Gln Glu Pro Asp Val Trp Leu Asn
      435          440          445
Leu Ile Glu Ser Gly Met Leu Arg Ala Ser Gly Leu Asp Ala Met Ala
      450          455          460
Lys His Tyr Val Asn Leu Tyr Gln Ser Leu Leu Ser

```

WO 99/27105

PCT/IB98/01890

465 470 475
<210>1022
<211>185
<212>PRT
<213>Chlamydia pneumoniae
<400>1022
Met Glu Leu Val Val Thr Ser Arg Glu Thr Gly Lys Lys Ser Phe Leu
1 5 10 15
Lys Lys Ile Arg Gln Gln Gly Gly Ile Pro Ala Val Val Tyr Ser Ala
20 25 30
Gly Lys Ser Leu Ala Asn Ile Thr Val Asp Ala Leu Val Phe Lys Lys
35 40 45
Phe Leu Ser Asn Leu Glu Ser Gly Ala Leu Ser Ser Thr Val Phe Ser
50 55 60
Leu Ser Tyr Glu Gly Arg Ile Ile Lys Ala Leu Val Lys Asp Ile Gln
65 70 75 80
Tyr Gln Ile Thr Thr Tyr Asp Val Ile His Leu Asp Phe Glu Glu Leu
85 90 95
Val Glu Asp Arg Pro Val Lys Leu Asn Ile Pro Ile Arg Cys Ile Asn
100 105 110
Ala Val Asp Cys Ile Gly Val Lys Leu Gly Gly Ser Leu Arg Gln Val
115 120 125
Ile Arg Ala Val Arg Val Val Cys Lys Pro Lys Asp Ile Val Pro Phe
130 135 140
Leu Glu Leu Asp Val Arg Ser Val Gly Leu Ser Gln Thr Arg Lys Leu
145 150 155 160
Ser Asp Ile Lys Ile Pro Ala Gly Ile Glu Thr Ile Thr Pro Leu Lys
165 170 175
Glu Val Ala Ile Thr Val Ser Arg Arg
180 185

<210>1023
<211>150
<212>PRT
<213>Chlamydia pneumoniae
<400>1023
Met Ala Lys Leu Ile Val Ala Ile Gly Asn Pro Arg His Gly Tyr Ala
1 5 10 15
Asn Thr Arg His Asn Ala Gly Phe Leu Leu Ala Asp Arg Leu Val Glu
20 25 30
Glu Leu Gln Gly Pro Pro Phe Lys Pro Leu Ser Lys Cys His Ala Leu
35 40 45
Met Thr Leu Val Glu Ser Ser Ser Gly Pro Leu Val Phe Ile Lys Pro
50 55 60
Thr Thr Phe Val Asn Leu Ser Gly Lys Ala Val Val Leu Ala Lys Lys
65 70 75 80
Tyr Phe Asn Val Ala Leu Ser His Ile Leu Val Leu Ala Asp Asp Val
85 90 95
Asn Arg Ser Phe Gly Lys Leu Arg Leu Cys Phe Asn Gly Gly Ser Gly
100 105 110
Gly His Asn Gly Leu Lys Ser Ile Thr Ala Ser Leu Gly Ser Asn Glu
115 120 125
Tyr Trp Gln Leu Arg Phe Gly Val Gly Arg Pro Leu Glu Glu Val Leu
130 135 140
Ser Tyr Leu Ile Ser Phe
145 150

<210>1024
<211>112
<212>PRT
<213>Chlamydia pneumoniae
<400>1024
Met Gly Lys Lys Glu Asn Gln Leu Tyr Glu Gly Ala Tyr Val Phe Ser
1 5 10 15
Val Thr Leu Ser Glu Glu Ala Arg Arg Lys Ala Leu Asp Lys Val Ile
20 25 30

Ser Gly Ile Thr Asn Tyr Gly Gly Glu Ile His Lys Ile His Asp Gln
 35 40 45
 Gly Arg Lys Lys Leu Ala Tyr Thr Ile Arg Gly Ala Arg Glu Gly Tyr
 50 55 60
 Tyr Tyr Phe Ile Tyr Phe Ser Val Ser Pro Gly Ala Ile Thr Glu Leu
 65 70 75 80
 Trp Lys Glu Tyr His Leu Asn Glu Asp Leu Leu Arg Phe Met Thr Leu
 85 90 95
 Arg Ala Asp Ser Val Lys Glu Val Leu Glu Phe Ala Ser Leu Pro Glu
 100 105 110

<210>1025

<211>82

<212>PRT

<213>Chlamydia pneumoniae

<400>1025

Met Asn Lys Pro Val His Asn Asn Glu His Arg Arg Lys Arg Phe Asn
 1 5 10 15
 Lys Lys Cys Pro Phe Val Ser Ala Gly Trp Lys Thr Ile Asp Tyr Lys
 20 25 30
 Asp Val Glu Thr Leu Lys Lys Phe Ile Thr Glu Arg Gly Lys Val Leu
 35 40 45
 Pro Arg Arg Ile Thr Gly Val Ser Ser Arg Phe Gln Gly Val Leu Ser
 50 55 60
 Gln Ala Ile Lys Arg Ala Arg His Leu Gly Leu Leu Pro Phe Val Gly
 65 70 75 80
 Glu Asp

<210>1026

<211>169

<212>PRT

<213>Chlamydia pneumoniae

<400>1026

Met Lys Gln Gln Leu Leu Leu Leu Glu Asp Val Asp Gly Leu Gly Arg
 1 5 10 15
 Ser Gly Asp Leu Ile Thr Ala Arg Pro Gly Tyr Val Arg Asn Tyr Leu
 20 25 30
 Ile Pro Lys Lys Lys Ala Val Ile Ala Gly Ala Gly Thr Leu Arg Leu
 35 40 45
 Gln Ala Lys Leu Lys Glu Gln Arg Leu Ile Gln Ala Ala Ala Asp Lys
 50 55 60
 Ala Asp Ser Glu Arg Ile Ala Gln Ala Leu Lys Asp Ile Val Leu Glu
 65 70 75 80
 Phe Gln Val Arg Val Asp Pro Asp Asn Asn Met Tyr Gly Ser Val Thr
 85 90 95
 Ile Ala Asp Ile Ile Ala Glu Ala Ala Lys Lys Asn Ile Phe Leu Val
 100 105 110
 Arg Lys Asn Phe Pro His Ala His Tyr Ala Ile Lys Asn Leu Gly Lys
 115 120 125
 Lys Asn Ile Pro Leu Lys Leu Lys Glu Glu Val Thr Ala Thr Leu Leu
 130 135 140
 Val Glu Val Thr Ser Asp Asn Glu Tyr Val Thr Val Leu Ala Gln Gly
 145 150 155 160
 Lys Gln Thr Glu Glu Asn Gln Glu Gly
 165

<210>1027

<211>81

<212>PRT

<213>Chlamydia pneumoniae

<400>1027

Val Gly Arg Glu Cys Glu Gly Leu Phe Met Ser Tyr Lys Ile Thr Leu
 1 5 10 15
 Pro Lys Ala Asp Glu Thr Thr Ala Lys Lys Val Thr Lys Ile Ser Glu
 20 25 30
 Ala Ser Thr Leu Ile Phe Ser Val Leu Lys Glu Lys Ala Ser Leu Gly

35 40 45
 Asn Val His Gly Phe Cys Gln Ala Glu Asn Ser Leu Ser Val Glu Ala
 50 55 60
 Asn Lys Ile Ile Ser Val Ala Glu Asn Thr Leu Ala Gly Cys Phe Cys
 65 70 75 80
 Lys

<210>1028

<211>455

<212>PRT

<213>Chlamydia pneumoniae

<400>1028

Leu Val Trp Phe Ser Met Ile Leu Pro Pro Tyr Ser Tyr Ser Leu Lys
 1 5 10 15
 Ile Gly Ala Ala Val Leu Phe Phe Cys Ser Ile Leu His Thr Phe Leu
 20 25 30
 Thr Pro Trp Leu Tyr Thr Leu Cys Gln Ser Tyr Glu His Lys Lys Leu
 35 40 45
 Val Phe Pro Glu Cys Trp Lys Arg Tyr Ala Arg Leu Ser Glu Leu Phe
 50 55 60
 Arg Ile Leu Ser Arg Val Glu Ile Val Phe Phe Leu Trp Ala Val Pro
 65 70 75 80
 Leu Phe Phe Trp Phe Leu Tyr Thr Glu Gly Tyr Arg Ile Ser Met Ala
 85 90 95
 Tyr Phe Asn Ser Arg Asn Tyr Gly Phe Ala Val Phe Ile Met Val Ile
 100 105 110
 Leu Ile Leu Leu Glu Ser Arg Pro Ile Val Tyr Phe Ala Glu Leu Val
 115 120 125
 Leu Ser Ser Ile Ala Lys Leu Gly Lys Thr Ser Pro Lys Ser Trp Trp
 130 135 140
 Trp Thr Leu Met Ile Ala Pro Pro Leu Leu Ser Cys Leu Leu Lys Glu
 145 150 155 160
 Thr Gly Ala Met Ile Ile Gly Ala Thr Leu Leu Met Arg His Phe Tyr
 165 170 175
 Val Phe Thr Pro Ser Arg Arg Phe Ala Tyr Ala Thr Ile Gly Leu Leu
 180 185 190
 Phe Ser Asn Ile Ser Ile Gly Gly Leu Thr Ser Tyr Val Ser Ser Arg
 195 200 205
 Ala Leu Phe Leu Ile Phe Pro Ala Leu Lys Trp Glu His Ser Phe Phe
 210 215 220
 Leu Ser His Phe Ala Trp Lys Ala Ile Val Ala Ile Leu Ile Ser Thr
 225 230 235 240
 Thr Ile Tyr Tyr Phe Ile Phe Arg Lys Glu Phe Lys Lys Phe Pro Asp
 245 250 255
 Ile Pro Ser Asp Lys Asp Pro Ser Val Glu Lys Val Pro Trp Trp Ile
 260 265 270
 Ile Cys Val Asn Ile Ile Phe Val Gly Ser Ile Ile Leu Ser Arg Ser
 275 280 285
 Thr Pro Leu Phe Met Gly Ala Leu Leu Leu Phe Tyr Leu Gly Phe Gln
 290 295 300
 Lys Phe Thr Ile Phe Tyr Gln Asp Pro Ile Asn Leu Ser Lys Val Cys
 305 310 315 320
 Tyr Val Gly Leu Phe Tyr Ala Gly Leu Val Val Phe Gly Asp Leu Gln
 325 330 335
 Glu Trp Trp Val Leu Asn Leu Met Gln Gly Leu Ser Asp Phe Gly Tyr
 340 345 350
 Met Thr Val Ser Tyr Thr Leu Ser Ile Phe Leu Asp Asn Ala Leu Val
 355 360 365
 Asn Tyr Leu Val His Asn Leu Ser Val Ala Thr Asp Cys Tyr His Tyr
 370 375 380
 Leu Val Val Ala Gly Cys Met Ala Ala Gly Gly Leu Thr Leu Val Ser
 385 390 395 400
 Asn Ile Pro Asn Ile Val Gly Tyr Leu Ile Leu Arg Ser Ala Phe Pro
 405 410 415

Ser Ser Thr Ile His Met Gly Trp Leu Phe Leu Gly Ala Leu Gly Pro
 420 425 430
 Ser Ile Ile Ser Leu Gly Val Phe Trp Leu Leu Lys Asn Val Pro Glu
 435 440 445
 Phe Leu Tyr Cys Phe Phe Arg
 450 455
 <210>1029
 <211>362
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1029
 Pro Val Asn His Gln Leu Leu Arg Glu Tyr Tyr Pro Ala Thr Gln Ala
 1 5 10 15
 Gly Phe Ser Phe Thr Ser Ala Leu Gly Gly Asp Gly Ile Asp Leu Arg
 20 25 30
 Val Ser Gly Tyr Thr Thr Thr Val Pro Ala Leu Leu Asn Ser Ile Leu
 35 40 45
 Thr Ser Leu Pro Asn Leu Glu Ile Arg Tyr Glu Thr Phe Leu Val Tyr
 50 55 60
 Lys Lys Gln Leu Leu Glu Leu Tyr Gln Gly Ala Leu Leu Asn Cys Pro
 65 70 75 80
 Val Arg Ser Gly Leu Asp Glu Leu Ala Ser Gln Val Met Lys Glu Thr
 85 90 95
 Tyr Ser Asn Thr Thr Lys Leu Ser Ala Leu Glu Lys Leu Ser Phe Ser
 100 105 110
 Glu Phe Gln Ala Phe Ala Ser Asn Leu Phe Asn Ser Val His Leu Glu
 115 120 125
 Val Met Val Leu Gly Asn Leu Ser Glu Gln Gln Lys Lys Asp Tyr Leu
 130 135 140
 Glu Met Leu Gln Val Phe Thr Ala Ser Arg Ser Ser His Ala Thr Lys
 145 150 155 160
 Pro Phe Tyr Tyr Glu Leu Gln Ser Gln Glu Ile Ser Glu Ile His His
 165 170 175
 Asp Tyr Pro Leu Thr Ala Asn Gly Met Leu Leu Leu Leu Gln Asp Lys
 180 185 190
 Ser Ser Pro Ser Ile Gln Gly Lys Val Cys Ala Glu Met Leu Phe Glu
 195 200 205
 Trp Leu His His Ile Thr Phe Glu Glu Leu Arg Thr Gln Gln Gln Leu
 210 215 220
 Gly Tyr Met Val Gly Ala Arg Tyr Arg Glu Phe Ala Ser Arg Pro Phe
 225 230 235 240
 Gly Phe Leu Tyr Ile Arg Ser Asp Ala Tyr Ser Pro Glu Glu Leu Leu
 245 250 255
 Ala Lys Thr Ser Leu Phe Leu Asn Lys Val Ser Ala Ser Pro Glu Lys
 260 265 270
 Phe Gly Ile Ser Gln Glu Lys Phe Ala Asn Ile Arg Lys Ala Tyr Ile
 275 280 285
 Asn Lys Ile Leu Glu Pro Glu His Ser Leu Asp Met Met Asn Ser Ala
 290 295 300
 Leu Phe Ser Leu Ala Phe Glu Arg Pro Phe Val Glu Phe Ser Thr Pro
 305 310 315 320
 Asp Leu Lys Ile Ala Ile Ala Glu Thr Leu Thr Tyr Glu Glu Phe Leu
 325 330 335
 Lys Tyr Cys Gln Cys Phe Leu Ser Asn Glu Leu Gly Thr Gln Thr Ser
 340 345 350
 Val Tyr Ile Arg Gly Thr Gln Lys Thr Ser
 355 360
 <210>1030
 <211>945
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1030
 Ile Tyr Arg Ala Ile Tyr Met Gln Phe Ser Arg Tyr Leu Arg Tyr Ala
 1 5 10 15

Phe Asp Asn Gln Tyr Leu Pro Glu Pro Leu Tyr Gln Lys Phe Ser Val
 20 25 30
 Phe His Gln Asn Tyr Ile Asp Ala Ala Thr Lys Lys Ala Ala Asp
 35 40 45
 Gln Ala Glu Val Leu Cys Leu Gln Trp Val Lys Val Ile Ile Glu Asp
 50 55 60
 Leu Lys Asn Pro Phe Ile Phe Pro Pro Tyr His Lys Lys Ile Arg Ala
 65 70 75 80
 Pro Ile Asp Leu Phe Arg Leu Ser Ile Asp Phe Phe Ser Leu Val Ile
 85 90 95
 Asp Asp Lys Asn Ser Arg Ile Leu Asn Leu His Arg Leu Lys Glu Ile
 100 105 110
 Glu Glu Tyr Ile Ala Arg Gly Asp Asn Val Val Leu Leu Ala Asn His
 115 120 125
 Gln Thr Glu Cys Asp Pro Gln Leu Met Tyr Tyr Ala Leu Gly Lys Thr
 130 135 140
 His Pro Glu Leu Met Glu Asn Met Ile Phe Val Ala Gly Asp Arg Val
 145 150 155 160
 Thr Ser Asp Pro Leu Ala Arg Pro Phe Ser Met Gly Cys Asp Leu Leu
 165 170 175
 Cys Ile Tyr Ser Lys Arg His Ile Ala Thr Pro Pro Glu Leu Arg Glu
 180 185 190
 Glu Lys Leu Leu His Asn Gln Lys Ser Met Gln Ile Leu Lys Thr Leu
 195 200 205
 Leu Asn Glu Gly Gly Lys Phe Ile Tyr Val Ala Pro Ala Gly Gly Arg
 210 215 220
 Asp Arg Lys Asn Ala Glu Gly Arg Leu Tyr Pro Ser Glu Phe Ser Pro
 225 230 235 240
 Glu Ser Ile Glu Val Phe Arg Leu Leu Ala Lys Ala Ser Asn Gln Thr
 245 250 255
 Thr His Phe Tyr Pro Phe Ala Leu Lys Thr Tyr Asp Ile Leu Pro Pro
 260 265 270
 Pro Pro Lys Ile Glu Asn Ala Ile Gly Glu Gln Arg Ala Ile Phe Phe
 275 280 285
 Ala Pro Val Phe Phe Asn Phe Gly Ala Glu Leu Phe Phe Asp Ala Leu
 290 295 300
 Cys Ser Lys Glu Glu Leu Ile His Cys Asp Lys His Ala Gln Arg Thr
 305 310 315 320
 Leu Arg Ala Glu Lys Val Phe Ser Ile Cys Lys Lys Ser Ile Arg Gly
 325 330 335
 Ile Val Arg Cys Phe Gly Asn Phe Phe Val Pro Ile Leu Ile Cys Thr
 340 345 350
 Ser Leu Ser Ile Thr Ser Cys Glu Gln Gln Phe Lys Val Val Pro Asn
 355 360 365
 Gln Cys Pro Leu Gln Val Ser Thr Pro Ala Ala Ala Asp Gln Lys Ile
 370 375 380
 Glu Lys Ile Ile Cys Ser Asn Gly Leu Pro Leu Leu Ile Ile Ser Asp
 385 390 395 400
 Pro Asn Leu Pro Thr Ser Gly Ala Ala Leu Leu Val Lys Thr Gly Asn
 405 410 415
 Asn Ala Asp Pro Glu Glu Tyr Pro Gly Met Ala His Phe Thr Glu His
 420 425 430
 Cys Val Phe Leu Gly Asn Glu Lys Tyr Pro Glu Val Ser Gly Phe Pro
 435 440 445
 Gly Phe Leu Ser Glu Asn Asn Gly Val His Asn Ala Phe Thr Tyr Pro
 450 455 460
 Asn Lys Thr Val Phe Val Phe Ser Val Glu His Ser Ala Phe Ser Asp
 465 470 475 480
 Ala Leu Asp Gln Phe Val His Leu Phe Ile Asn Pro Lys Phe Arg Gln
 485 490 495
 Glu Asp Leu Asp Arg Glu Lys Tyr Ala Val His Gln Glu Phe Ala Ala
 500 505 510
 His Pro Leu Ser Asp Gly Arg Arg Val His Arg Ile Gln Gln Leu Val
 515 520 525

Ala Pro Gln Gly His Pro Cys Ala Arg Phe Gly Cys Gly Asn Ala Ser
 530 535 540
 Thr Leu Thr Pro Val Thr Thr Glu Lys Met Ala Glu Trp Phe Lys Leu
 545 550 555 560
 His Tyr Ser Pro Glu Asn Met Cys Ala Ile Ala Tyr Thr Ser Ala Pro
 565 570 575
 Leu Ser Lys Ala Lys Lys Gln Phe Ser Lys Ile Phe Ser Gln Ile Pro
 580 585 590
 Arg Ser Lys Asn Tyr Glu Arg Gln Glu Pro Phe Leu Pro Ser Gly Asp
 595 600 605
 Thr Ser Ser Leu Lys Asn Leu Tyr Ile Asn Gln Ala Ile Gln Pro Thr
 610 615 620
 Ser Asn Leu Glu Ile Tyr Trp His Ile Tyr Glu Ser Ser His Pro Ile
 625 630 635 640
 Pro Leu Gly Cys Tyr Lys Ala Leu Ala Glu Val Leu Arg Asn Glu Ser
 645 650 655
 Lys Asn Ser Leu Val Ser Leu Leu Lys Asn Glu Gln Leu Ile Thr Asp
 660 665 670
 Leu Asp Val Glu Phe Phe Arg Ser Ser Leu Asn Thr Gly Glu Phe Tyr
 675 680 685
 Ile Ser Tyr Glu Leu Thr Glu Lys Gly Asp Lys His Tyr Ser Gln Val
 690 695 700
 Ile Asp Ser Thr Phe Gln Tyr Leu Arg Tyr Ile Gln Glu His Gly Ile
 705 710 715 720
 Pro Asn Tyr Thr Leu Glu Glu Ile Ser Thr Ile Asn Ala Leu Asn Tyr
 725 730 735
 Cys Tyr Ser Ser Lys Ser Pro Leu Phe Asp Leu Leu Cys Lys Gln Ile
 740 745 750
 Val Ser Leu Gly Asn Glu Asp Leu Ser Thr Tyr Pro Tyr His Ser Leu
 755 760 765
 Val Tyr Pro Lys Tyr Ser Ser Glu Asp Glu Ser Ala Leu Leu Asn Leu
 770 775 780
 Val Ser Asp Pro Glu Gln Ala Arg Phe Val Leu Ser Ser Lys Asn Ser
 785 790 795 800
 Glu His Trp Glu Glu Ala Thr Gln Leu His Asp Pro Ile Phe Asp Met
 805 810 815
 Thr Tyr Tyr Val Lys Ala Leu Asp Gly Val Gln Asp Tyr Gly Lys Val
 820 825 830
 Gln Ser Leu Lys Pro Ile Ala Leu Pro Lys Pro Asn Leu Phe Ile Pro
 835 840 845
 Lys Glu Val Thr Leu Pro Gly Val His Leu Leu Lys Lys Gln Glu Phe
 850 855 860
 Pro Phe Ala Pro Ala Leu Ser Tyr Gln Asp Asp Lys Leu Thr Leu Tyr
 865 870 875 880
 His Cys Glu Asp His Tyr Tyr Thr Ala Pro Lys Leu Ser Ser Gln Ile
 885 890 895
 Arg Ile Arg Ser Pro Gln Ile Ser Arg Ser Ser Pro Gln Phe Leu Val
 900 905 910
 Ala Thr Glu Leu Tyr Cys Leu Ala Cys Glu Pro Ser Ala Phe Glu Gly
 915 920 925
 Val Leu Ser Arg Asn Ala Ser Trp Phe Phe Phe Tyr Phe Cys Phe Arg
 930 935 940
 Trp
 945
 <210>1031
 <211>521
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1031
 Ile Gly Thr Arg Lys Val Met Glu Asn Glu Ile Leu Leu Asn Ile Glu
 1 5 10 15
 Ser Lys Glu Ile Arg Tyr Ala His Leu Lys Asn Gly Gln Leu Phe Asp
 20 25 30
 Leu Thr Ile Glu Arg Lys Lys Val Arg Gln Leu Lys Gly Asn Ile Tyr

WO 99/27105

PCT/IB98/01890

35					40					45					
Arg	Gly	Arg	Val	Thr	Asn	Ile	Leu	Arg	Asn	Ile	Gln	Ser	Ala	Phe	Ile
50					55					60					
Asn	Ile	Asp	Glu	Arg	Glu	Asn	Gly	Phe	Ile	His	Ile	Ser	Asp	Ile	Leu
65					70					75					80
Glu	Asn	Ser	Lys	Lys	Phe	Glu	Gln	Met	Phe	Asp	Met	Asp	Val	Asp	Ala
				85					90					95	
Leu	Pro	Glu	Glu	Ala	Ser	Glu	Ala	Pro	Leu	Leu	Ser	Ser	Glu	Glu	Ala
			100					105					110		
Pro	Ile	Glu	Glu	Phe	Leu	Lys	Leu	Asp	Ser	Pro	Val	Leu	Val	Gln	Val
		115					120					125			
Val	Lys	Glu	Pro	Ile	Gly	Ser	Lys	Gly	Ala	Arg	Leu	Thr	Ser	Asn	Ile
		130					135					140			
Ser	Ile	Pro	Gly	Arg	Tyr	Leu	Val	Leu	Leu	Pro	Asn	Ser	Pro	His	Arg
145					150					155					160
Gly	Val	Ser	Arg	Lys	Ile	Glu	Asp	Pro	His	Met	Arg	Glu	Gln	Leu	Lys
				165					170					175	
Gln	Leu	Ile	Arg	Ser	Phe	Glu	Met	Pro	Gln	Asp	Met	Gly	Leu	Ile	Cys
			180					185					190		
Arg	Thr	Ala	Ser	Thr	Thr	Ala	Ser	Thr	Glu	Ala	Leu	Ile	Asn	Glu	Ala
		195					200					205			
His	Asp	Leu	Leu	Leu	Thr	Trp	Lys	Thr	Ile	Leu	Glu	Lys	Phe	Tyr	Ser
		210					215					220			
Thr	Glu	Gln	Pro	Cys	Leu	Leu	Tyr	Ser	Glu	Thr	Asp	Ile	Leu	Lys	Lys
225					230					235					240
Ala	Val	Ile	Thr	Cys	Ile	Asp	Lys	Asn	Tyr	Lys	Arg	Leu	Leu	Ile	Asp
			245						250					255	
Asp	Tyr	Ala	Thr	Tyr	Gln	Lys	Cys	Lys	His	Met	Leu	Lys	Lys	Tyr	Ser
		260					265						270		
Pro	Asp	Ala	Ser	Ile	Lys	Ile	Glu	Tyr	Tyr	Arg	Asp	Ser	Ile	Pro	Met
		275					280					285			
Phe	Glu	Arg	Phe	Asn	Ile	Glu	Lys	Glu	Ile	Asp	Lys	Ala	Thr	Arg	Arg
		290				295					300				
Lys	Ile	Trp	Leu	Ser	Ser	Gly	Gly	Tyr	Leu	Phe	Phe	Asp	Lys	Thr	Glu
305					310					315					320
Ala	Met	His	Thr	Ile	Asp	Val	Asn	Ser	Gly	Arg	Ser	Thr	Gln	Leu	Glu
			325						330					335	
Ser	Gly	Val	Glu	Glu	Thr	Leu	Val	Gln	Ile	Asn	Leu	Glu	Ala	Ala	Glu
			340					345					350		
Glu	Ile	Ala	Arg	Gln	Leu	Arg	Leu	Arg	Asn	Val	Gly	Gly	Leu	Val	Ile
		355					360					365			
Ile	Asp	Phe	Ile	Asp	Met	Lys	Ser	Arg	Lys	Asn	Gln	Arg	Arg	Val	Leu
		370				375					380				
Glu	Arg	Leu	Lys	Glu	His	Met	Lys	Tyr	Asp	Ala	Ala	Arg	Cys	Thr	Ile
385					390					395					400
Leu	Ser	Met	Ser	Glu	Phe	Gly	Leu	Val	Glu	Met	Thr	Arg	Gln	Arg	Asn
			405						410					415	
Arg	Glu	Ser	Leu	Met	Gln	Thr	Leu	Phe	Thr	Leu	Cys	Pro	Tyr	Cys	Ser
			420				425						430		
Gly	Asn	Ala	Ile	Ile	Lys	Thr	Pro	Glu	Ser	Val	Val	Ile	Glu	Ile	Glu
		435					440					445			
Arg	Asp	Leu	Lys	Lys	Val	Ile	Asn	His	Lys	Glu	His	Ser	His	Leu	Cys
		450				455					460				
Leu	Val	Val	His	Pro	Glu	Ile	Ala	Ser	Tyr	Met	Lys	Gln	Glu	Asn	Asp
465					470					475					480
Asp	Asn	Glu	Met	Ile	Asn	Leu	Ala	Lys	Gln	Leu	Lys	Ala	Lys	Leu	Gln
			485						490					495	
Ile	Asn	Thr	Ser	Asp	Ser	Val	His	Leu	Asn	His	Tyr	Gln	Phe	Phe	Ser
			500				505						510		
Leu	Ile	Thr	Gly	Glu	Ser	Ile	Asp	Leu							
		515					520								

<210>1032
 <211>176
 <212>PRT

<213>Chlamydia pneumoniae

<400>1032

Ser Leu Ser Leu Val Ser Tyr Leu Ser Asn Pro Gln Lys Ala Leu Val
 1 5 10 15
 Leu Gly Ser Lys Gly Phe Ser Met Asp Cys Val Asp Asn Leu Lys Leu
 20 25 30
 Tyr Ile Phe Arg Leu Lys Leu Pro Gly Asp Thr Glu Arg Ile Ser Tyr
 35 40 45
 Ser Ile Ser Pro Glu Tyr Ile Arg Glu Lys Gly Glu Glu Glu Leu Leu
 50 55 60
 Asn Ser Pro Ile Glu Val Glu Gly Ser Leu Gly Arg Ile Asp Ser Asp
 65 70 75 80
 Gln Trp Ile Leu Ser Leu Ser Leu Lys Thr Gln Leu Gly Leu Cys Cys
 85 90 95
 Pro Val Cys Asn Asn Phe Phe Ser His Ser Val Cys Leu Pro Asp Leu
 100 105 110
 Gln Arg Val Ile Ser His Asp Glu Val Gly Ser Gly Val Phe Asp Cys
 115 120 125
 Arg Pro Leu Ile Arg Gln Glu Leu Leu Leu Glu Ser Asp Cys Phe Glu
 130 135 140
 Glu Cys Ser Gly Gln Gly Cys Pro Glu Arg Lys Asn Ile Leu Lys Phe
 145 150 155 160
 Leu Glu Asp Arg Lys Lys His Glu Gly Asn Asn Pro Phe Glu Tyr Leu
 165 170 175

<210>1033

<211>213

<212>PRT

<213>Chlamydia pneumoniae

<400>1033

Met Glu Val Gln Ile Gly Ile Asp Leu Met Gly Gly Asp His Ser Pro
 1 5 10 15
 Leu Val Val Trp Gln Val Leu Val Asp Val Leu Lys Ser Gln Ser Ser
 20 25 30
 Thr Ile Pro Phe Ala Phe Thr Leu Phe Ala Ser Glu Glu Ile Arg Lys
 35 40 45
 Gln Ile Gln Glu Glu Phe Ile Ser Asp Leu Pro Gln Glu Lys Phe Pro
 50 55 60
 Lys Ile Ile Ser Ala Glu Asn Phe Val Ala Met Glu Asp Ser Pro Leu
 65 70 75 80
 Ala Ala Ile Arg Lys Lys Ser Ser Ser Met Ala Leu Gly Leu Asp Tyr
 85 90 95
 Leu Gln Glu Asp Lys Leu Asp Ala Phe Ile Ser Thr Gly Asn Thr Gly
 100 105 110
 Ala Leu Val Thr Leu Ala Arg Ala Lys Ile Pro Leu Phe Pro Ala Val
 115 120 125
 Ser Arg Pro Ala Leu Leu Val Cys Val Pro Thr Met Arg Gly His Ala
 130 135 140
 Val Ile Leu Asp Val Gly Ala Asn Ile Ser Val Lys Pro Glu Glu Met
 145 150 155 160
 Val Gly Phe Ala Arg Met Gly Leu Ala Tyr Arg Gln Cys Leu Gly Asp
 165 170 175
 Ser Lys Ile Pro Thr Ile Gly Leu Leu Asn Ile Gly Ser Glu Glu Arg
 180 185 190
 Lys Gly Thr Glu Ala His Arg Gln Thr Phe Arg Met Leu Arg Glu Thr
 195 200 205
 Phe Gly Glu Leu Ser
 210

<210>1034

<211>127

<212>PRT

<213>Chlamydia pneumoniae

<400>1034

Arg Tyr Gly Ser Pro Ser Pro Asp Ile Pro Tyr Ala Ala Arg Asp Ile
 1 5 10 15

WO 99/27105

PCT/IB98/01890

Trp Arg Thr Phe Leu Gly Asn Ile Glu Ser Gly Ala Val Phe Asp Gly
 20 25 30
 Ala Ala Asp Ile Val Val Thr Asp Gly Phe Thr Gly Asn Ile Phe Leu
 35 40 45
 Lys Thr Ala Glu Gly Val Phe Glu Phe Leu Gln Arg Ile Leu Gly Asp
 50 55 60
 Lys Leu Glu Ala Asp Ile Gln Arg Arg Leu Asp Tyr Thr Phe Tyr Pro
 65 70 75 80
 Gly Ser Val Val Cys Gly Leu Ser Lys Leu Val Ile Lys Cys His Gly
 85 90 95
 Lys Ala Cys Gly Ser Ser Leu Phe His Gly Ile Leu Gly Ser Ile Asn
 100 105 110
 Leu Ala Gln Ala Arg Leu Cys Lys Arg Ile Leu Ser Asn Leu Ile
 115 120 125
 <210>1035
 <211>1617
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1035
 Thr Pro Leu Arg Phe Lys Val Ala Met Val Ala Lys Lys Thr Val Arg
 1 5 10 15
 Ser Tyr Arg Ser Ser Phe Ser His Ser Val Ile Val Ala Ile Leu Ser
 20 25 30
 Ala Gly Ile Ala Phe Glu Ala His Ser Leu His Ser Ser Glu Leu Asp
 35 40 45
 Leu Gly Val Phe Asn Lys Gln Phe Glu Glu His Ser Ala His Val Glu
 50 55 60
 Glu Ala Gln Thr Ser Val Leu Lys Gly Ser Asp Pro Val Asn Pro Ser
 65 70 75 80
 Gln Lys Glu Ser Glu Lys Val Leu Tyr Thr Gln Val Pro Leu Thr Gln
 85 90 95
 Gly Ser Ser Gly Glu Ser Leu Asp Leu Ala Asp Ala Asn Xaa Leu Glu
 100 105 110
 His Phe Gln His Leu Phe Glu Glu Thr Thr Val Phe Gly Ile Asp Gln
 115 120 125
 Lys Leu Val Trp Ser Asp Leu Asp Thr Arg Asn Phe Ser Gln Pro Thr
 130 135 140
 Gln Glu Pro Asp Thr Ser Asn Ala Val Ser Glu Lys Ile Ser Ser Asp
 145 150 155 160
 Thr Lys Glu Asn Arg Lys Asp Leu Glu Thr Glu Asp Pro Ser Lys Lys
 165 170 175
 Ser Gly Leu Lys Glu Val Ser Ser Asp Leu Pro Lys Ser Pro Glu Thr
 180 185 190
 Ala Val Ala Ala Ile Ser Glu Asp Leu Glu Ile Ser Glu Asn Ile Ser
 195 200 205
 Ala Arg Asp Pro Leu Gln Gly Leu Ala Phe Phe Tyr Lys Asn Thr Ser
 210 215 220
 Ser Gln Ser Ile Ser Glu Lys Asp Ser Ser Phe Gln Gly Ile Ile Phe
 225 230 235 240
 Ser Gly Ser Gly Ala Asn Ser Gly Leu Gly Phe Glu Asn Leu Lys Ala
 245 250 255
 Pro Lys Ser Gly Ala Ala Val Tyr Ser Asp Arg Asp Ile Val Phe Glu
 260 265 270
 Asn Leu Val Lys Gly Leu Ser Phe Ile Ser Cys Glu Ser Leu Glu Asp
 275 280 285
 Gly Ser Ala Ala Gly Val Asn Ile Val Val Thr His Cys Gly Asp Val
 290 295 300
 Thr Leu Thr Asp Cys Ala Thr Gly Leu Asp Leu Glu Ala Leu Arg Leu
 305 310 315 320
 Val Lys Asp Phe Ser Arg Gly Gly Ala Val Phe Thr Ala Arg Asn His
 325 330 335
 Glu Val Gln Asn Asn Leu Ala Gly Gly Ile Leu Ser Val Val Gly Asn
 340 345 350
 Lys Gly Ala Ile Val Val Glu Lys Asn Ser Ala Glu Lys Ser Asn Gly

PCT/LB98/01890

1055

865	870	875	880
Ala Gly Asp Ile	Leu Phe Val Ser Asn Ser	Thr Gly Ser Tyr Gly Gly	
	885	890	895
Ala Ile Phe Val	Gly Ser Leu Val Ala Ser	Glu Gly Ser Asn Pro Arg	
	900	905	910
Thr Leu Thr Ile	Thr Gly Asn Ser Gly Asp	Ile Leu Phe Ala Lys Asn	
	915	920	925
Ser Thr Gln Thr	Ala Ala Ser Leu Ser Glu Lys	Asp Ser Phe Gly Gly	
	930	935	940
Gly Ala Ile Tyr	Thr Gln Asn Leu Lys Ile Val	Lys Asn Ala Gly Asn	
	945	950	955
Val Ser Phe Tyr	Gly Asn Arg Ala Pro Ser	Gly Ala Gly Val Gln Ile	
	965	970	975
Ala Asp Gly Gly	Thr Val Cys Leu Glu Ala Phe	Gly Gly Asp Ile Leu	
	980	985	990
Phe Glu Gly Asn	Ile Asn Phe Asp Gly Ser Phe	Asn Ala Ile His Leu	
	995	1000	1005
Cys Gly Asn Asp	Ser Lys Ile Val Glu Leu Ser	Ala Val Gln Asp Lys	
	1010	1015	1020
Asn Ile Ile Phe	Gln Asp Ala Ile Thr Tyr	Glu Glu Asn Thr Ile Arg	
	1025	1030	1035
Gly Leu Pro Asp	Lys Asp Val Ser Pro Leu	Ser Ala Pro Ser Leu Ile	
	1045	1050	1055
Phe Asn Ser Lys	Pro Gln Asp Asp Ser Ala	Gln His His Glu Gly Thr	
	1060	1065	1070
Ile Arg Phe Ser	Arg Gly Val Pro Lys Ile	Pro Gln Ile Ala Ala Ile	
	1075	1080	1085
Gln Glu Gly Thr	Leu Ala Leu Ser Gln Asn	Ala Glu Leu Trp Leu Ala	
	1090	1095	1100
Gly Leu Lys Gln	Glu Thr Gly Ser Ser Ile	Val Leu Ser Ala Gly Ser	
	1105	1110	1115
Ile Leu Arg Ile	Phe Asp Ser Gln Val Asp	Ser Ser Ala Pro Leu Pro	
	1125	1130	1135
Thr Glu Asn Lys	Glu Glu Thr Leu Val Ser	Ala Gly Val Gln Ile Asn	
	1140	1145	1150
Met Ser Ser Pro	Thr Pro Asn Lys Asp Lys	Ala Val Asp Thr Pro Val	
	1155	1160	1165
Leu Ala Asp Ile	Ile Ser Ile Thr Val Asp	Leu Ser Ser Phe Val Pro	
	1170	1175	1180
Glu Gln Asp Gly	Thr Leu Pro Leu Pro Pro	Glu Ile Ile Ile Pro Lys	
	1185	1190	1195
Gly Thr Lys Leu	His Ser Asn Ala Ile Asp	Leu Lys Ile Ile Asp Pro	
	1205	1210	1215
Thr Asn Val Gly	Tyr Glu Asn His Ala Leu	Leu Ser Ser His Lys Asp	
	1220	1225	1230
Ile Pro Leu Ile	Ser Leu Lys Thr Ala	Glu Gly Met Thr Gly Thr Pro	
	1235	1240	1245
Thr Ala Asp Ala	Ser Leu Ser Asn Ile Lys	Ile Asp Val Ser Leu Pro	
	1250	1255	1260
Ser Ile Thr Pro	Ala Thr Tyr Gly His Thr	Gly Val Trp Ser Glu Ser	
	1265	1270	1275
Lys Met Glu Asp	Gly Arg Leu Val Val Gly	Trp Gln Pro Thr Gly Tyr	
	1285	1290	1295
Lys Leu Asn Pro	Glu Lys Gln Gly Ala Leu	Val Leu Asn Asn Leu Trp	
	1300	1305	1310
Ser His Tyr Thr	Asp Leu Arg Ala Leu	Lys Gln Glu Ile Phe Ala His	
	1315	1320	1325
His Thr Ile Ala	Gln Arg Met Glu Leu	Asp Phe Ser Thr Asn Val Trp	
	1330	1335	1340
Gly Ser Gly Leu	Gly Val Val Glu Asp Cys	Gln Asn Ile Gly Glu Phe	
	1345	1350	1355
Asp Gly Phe Lys	His His Leu Thr Gly Tyr	Ala Leu Gly Leu Asp Thr	
	1365	1370	1375
Gln Leu Val Glu	Asp Phe Leu Ile Gly Gly	Cys Phe Ser Gln Phe Phe	

1380 1385 1390
 Gly Lys Thr Glu Ser Gln Ser Tyr Lys Ala Lys Asn Asp Val Lys Ser
 1395 1400 1405
 Tyr Met Gly Ala Ala Tyr Ala Gly Ile Leu Ala Gly Pro Trp Leu Ile
 1410 1415 1420
 Lys Gly Ala Phe Val Tyr Gly Asn Ile Asn Asn Asp Leu Thr Thr Asp
 1425 1430 1435 1440
 Tyr Gly Thr Leu Gly Ile Ser Thr Gly Ser Trp Ile Gly Lys Gly Phe
 1445 1450 1455
 Ile Ala Gly Thr Ser Ile Asp Tyr Arg Tyr Ile Val Asn Pro Arg Arg
 1460 1465 1470
 Phe Ile Ser Ala Ile Val Ser Thr Val Val Pro Phe Val Glu Ala Glu
 1475 1480 1485
 Tyr Val Arg Ile Asp Leu Pro Glu Ile Ser Glu Gln Gly Lys Glu Val
 1490 1495 1500
 Arg Thr Phe Gln Lys Thr Arg Phe Glu Asn Val Ala Ile Pro Phe Gly
 1505 1510 1515 1520
 Phe Ala Leu Glu His Ala Tyr Ser Arg Gly Ser Arg Ala Glu Val Asn
 1525 1530 1535
 Ser Val Gln Leu Ala Tyr Val Phe Asp Val Tyr Arg Lys Gly Pro Val
 1540 1545 1550
 Ser Leu Ile Thr Leu Lys Asp Ala Ala Tyr Ser Trp Lys Ser Tyr Gly
 1555 1560 1565
 Val Asp Ile Pro Cys Lys Ala Trp Lys Ala Arg Leu Ser Asn Asn Thr
 1570 1575 1580
 Glu Trp Asn Ser Tyr Leu Ser Thr Tyr Leu Ala Phe Asn Tyr Glu Trp
 1585 1590 1595 1600
 Arg Glu Asp Leu Ile Ala Tyr Asp Phe Asn Gly Gly Ile Arg Ile Ile
 1605 1610 1615
 Phe

<210>1036

<211>504

<212>PRT

<213>Chlamydia pneumoniae

<400>1036

Gln Ser Ile Leu Glu Ser Ile Ile Lys Tyr Phe Tyr Leu Ile His Asn
 1 5 10 15
 Ser Lys Met His Met Ser Asn Pro Ile Ser Leu Phe Ser Pro Ala Glu
 20 25 30
 Leu Ile Ala Lys Tyr Asn Leu Ile Pro Lys Thr Ser Pro Ile Tyr Pro
 35 40 45
 Arg Arg Thr Glu Leu Ile Ile Leu Glu Glu Asn Ala Cys Gln Thr Arg
 50 55 60
 Leu Thr Asn Val Ala Gln Val Leu His Pro Ser Ser Leu Phe Ser Met
 65 70 75 80
 Ser Lys Lys Ile Leu Asn Pro Cys Gly Cys Ser Gly Gly Pro Leu Cys
 85 90 95
 Trp Val Ile Leu Asn Ile Leu Ala Phe Ile Ile Thr Ser Val Leu Phe
 100 105 110
 Ile Ile Leu Leu Pro Val Asn Leu Ile Val Ala Gly Leu Arg Leu Phe
 115 120 125
 Met Pro Leu Pro Pro Lys Lys Ile Val Glu Asp Leu Ser Glu Pro Thr
 130 135 140
 Thr Glu Glu Thr Asn Glu Val Ile Gln Pro Phe Ile Phe Ala Leu Gln
 145 150 155 160
 Ala Leu Leu Phe Glu Asp Asn Lys Leu Arg Ser Phe Lys Ile Val Glu
 165 170 175
 Gln Ser Val Gly Lys Ala Pro Leu Pro Asn Pro Phe Leu Asn Arg Leu
 180 185 190
 Val Ala Ile Ser Pro Gln Xaa Ser Gln Glu Ala Met Arg Lys Ile Pro
 195 200 205
 Asp Leu Cys Ser Gln Leu Lys Lys Val Leu Lys Ser Leu Gly Val Leu
 210 215 220

WO 99/27105

PCT/IB98/01890

Thr Pro Glu Trp Lys His Met Leu Lys Tyr Phe Glu Gly Leu Lys Asn
 225 230 235 240
 Glu His Asp Ser Asn Pro Asp Lys Lys Thr Phe Pro Ile Leu Ile Lys
 245 250 255
 Leu Leu Ile Glu Ala Leu Thr Gly Lys Ser Ser Leu Pro Lys Thr Pro
 260 265 270
 Ser Thr Lys Glu Lys Met Gln Ala Ala Leu Phe Ile Ala Ser Ser Cys
 275 280 285
 Lys Thr Cys Lys Pro Thr Trp Gly Glu Val Ile Thr Arg Ser Leu Asn
 290 295 300
 Arg Leu Tyr Ser Ile Ala Asn Glu Gly Asp Asn Gln Leu Leu Ile Trp
 305 310 315 320
 Val Gln Glu Phe Lys Glu Arg Glu Leu Met Ser Ile Gln Asp Gly Asp
 325 330 335
 Asp Ala Glu Glu Tyr Arg Phe Ala Ala Gln Gln His Gly Glu Arg Tyr
 340 345 350
 Thr Glu Ala Ile Glu Gln Val Leu Arg Asn Glu Ser Ala Ala Lys Leu
 355 360 365
 Gln Trp His Val Ile Asn Thr Met Lys Phe Phe His Gly Lys Asn Leu
 370 375 380
 Gly Leu Val Thr Glu His Leu Gln Asp Thr Leu Gly Ala Leu Thr Leu
 385 390 395 400
 Arg Gln Thr Thr Val Asp Thr His Gln Gly Arg Glu Asp Ala Asp Leu
 405 410 415
 Ser Ala Ala Leu Phe Leu Asn Lys Tyr Leu Asn Ser Gly Asn Gln Leu
 420 425 430
 Val Asn Ser Val Phe Lys Ser Met Gln Lys Ala Asp Pro Glu Thr Lys
 435 440 445
 Ala Leu Ile Arg Glu Phe Ala Leu Asp Ile Leu Tyr Ala Ser Leu Arg
 450 455 460
 Leu Pro Gln Thr Ser Ala His Thr Glu Val Phe Ser Thr Leu Leu Met
 465 470 475 480
 Asp Pro Glu Thr Tyr Glu Pro Asn Lys Ala Cys Ile Ala Tyr Leu Leu
 485 490 495
 Tyr Val Leu Lys Ile Ile Glu Leu
 500

<210>1037

<211>615

<212>PRT

<213>Chlamydia pneumoniae

<400>1037

Lys Gly Phe Ser Phe Ser Lys Val Gly Leu Asn Met Ile Pro Ser Gly
 1 5 10 15
 Leu Val Tyr Leu Leu Tyr Pro Leu Gly Phe Leu Ala Ser Leu Phe Phe
 20 25 30
 Gly Ser Ala Phe Ser Ile Gln Trp Leu Ser Lys Lys Arg Lys Glu
 35 40 45
 Val Tyr Ala Pro Arg Ser Phe Trp Ile Leu Ser Ser Ile Gly Ala Thr
 50 55 60
 Leu Met Ile Val His Gly Thr Ile Gln Ser Gln Phe Pro Val Thr Val
 65 70 75 80
 Leu His Val Ile Asn Leu Ile Ile Tyr Leu Arg Asn Leu Asn Ile Thr
 85 90 95
 Ser Ser Arg Pro Ile Ser Phe Arg Ala Thr Leu Val Leu Met Ala Leu
 100 105 110
 Ser Val Val Phe Val Thr Leu Pro Phe Leu Tyr Val Asn Met Glu Trp
 115 120 125
 Met Ala Ser Pro Asn Ile Phe His Leu Pro Leu Pro Ala Gln Leu
 130 135 140
 Ser Trp His Leu Ile Gly Cys Leu Gly Leu Ala Ile Phe Ser Gly Arg
 145 150 155 160
 Phe Leu Ile Gln Trp Phe Tyr Ile Glu Ser Asn Asn Thr Lys Asp Phe
 165 170 175
 Pro Leu Leu Phe Trp Lys Ile Gly Leu Leu Gly Gly Leu Leu Ala Leu

WO 99/27105

PCT/IB98/01890

180 185 190
 Val Tyr Phe Ile Arg Ile Gly Asp Pro Ile Asn Ile Leu Cys Tyr Gly
 195 200 205
 Cys Gly Leu Phe Pro Ser Ile Ala Asn Leu Arg Leu Phe Tyr Lys Glu
 210 215 220
 Gln Arg Ser Thr Pro Tyr Leu Asp Thr His Cys Phe Leu Ser Ala Gly
 225 230 235 240
 Glu Ala Ser Gly Asp Ile Leu Gly Gly Lys Leu Ile Gln Ser Ile Lys
 245 250 255
 Ser Leu Tyr Pro Asn Ile Arg Phe Trp Gly Val Gly Gly Pro Ala Met
 260 265 270
 Arg Gln Glu Gly Leu Gln Pro Ile Leu Asn Met Glu Glu Phe Gln Val
 275 280 285
 Ser Gly Phe Ala Glu Val Leu Gly Ser Leu Phe Arg Leu Tyr Arg Asn
 290 295 300
 Tyr Arg Lys Ile Leu Lys Thr Ile Leu Lys His Lys Pro Ala Thr Leu
 305 310 315 320
 Ile Phe Ile Asp Phe Pro Asp Phe His Leu Leu Ile Lys Lys Leu
 325 330 335
 Arg Lys His Gly Tyr Arg Gly Lys Ile Ile His Tyr Val Cys Pro Ser
 340 345 350
 Ile Trp Ala Trp Arg Pro Lys Arg Lys Arg Ile Leu Glu Gln His Leu
 355 360 365
 Asp Met Leu Leu Leu Ile Leu Pro Phe Glu Glu Gly Leu Phe Lys Asn
 370 375 380
 Thr Ser Leu Glu Thr Val Tyr Leu Gly His Pro Leu Val Glu Glu Ile
 385 390 395 400
 Ser Asp Tyr Lys Glu Gln Ala Ser Trp Lys Glu Lys Phe Leu Asn Ser
 405 410 415
 Asp Arg Pro Ile Val Ala Ala Phe Pro Gly Ser Arg Arg Gly Asp Ile
 420 425 430
 Ser Arg Asn Leu Arg Ile Gln Val Gln Ala Phe Leu Asn Ser Ser Leu
 435 440 445
 Ser Gln Thr His Gln Phe Val Val Ser Ser Ser Ser Ala Lys Tyr Asp
 450 455 460
 Glu Ile Ile Glu Asp Thr Leu Lys Ala Glu Gly Cys Gln His Ser Gln
 465 470 475 480
 Ile Ile Pro Met Asn Phe Arg Tyr Glu Leu Met Arg Ser Cys Asp Cys
 485 490 495
 Ala Leu Ala Lys Cys Gly Thr Ile Val Leu Glu Thr Ala Leu Asn Gln
 500 505 510
 Thr Pro Thr Ile Val Met Cys Arg Leu Arg Pro Phe Asp Thr Phe Leu
 515 520 525
 Ala Lys Tyr Ile Phe Lys Ile Leu Leu Pro Ala Tyr Ser Leu Pro Asn
 530 535 540
 Ile Ile Met Asn Ser Val Ile Phe Pro Glu Phe Ile Gly Gly Lys Lys
 545 550 555 560
 Asp Phe His Pro Glu Glu Thr Ala Thr Ala Leu Asp Leu Leu Asn Gln
 565 570 575
 His Gly Ser Lys Glu Lys Gln Lys Glu Asp Cys Arg Lys Leu Cys Lys
 580 585 590
 Val Met Thr Thr Gly Gln Ile Ala Ser Glu Glu Phe Leu Lys Arg Ile
 595 600 605
 Phe Asp Thr Leu Pro Ala Val
 610 615
 <210>1038
 <211>430
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1038
 Met Val Cys Glu Asn Asn Ile Leu Ser Gly Arg Gly Leu Glu Leu Leu
 1 5 10 15
 Lys Lys Lys Ser Asn Ile Thr Leu Thr Pro Thr Ile Tyr Ser Val Ser
 20 25 30

Asn His Asn Ile Lys Leu Lys Asp Phe Ser Pro His Ala Leu Ser Val
 35 40 45
 Ile Lys Thr Leu Arg Lys Ala Gly Tyr Ile Ala Tyr Ile Val Gly Gly
 50 55 60
 Cys Ile Arg Asp Leu Leu Asn Thr Thr Pro Lys Asp Phe Asp Ile
 65 70 75 80
 Ser Thr Ser Ala Lys Pro Glu Glu Ile Lys Ala Ile Phe Lys Asn Cys
 85 90 95
 Ile Leu Val Gly Lys Arg Phe Arg Leu Ala His Ile Arg Phe Ser Lys
 100 105 110
 Gln Ile Ile Glu Val Ser Thr Phe Arg Ser Gly Ser Thr Asp Glu Asp
 115 120 125
 Val Leu Ile Thr Lys Asp Asn Leu Trp Gly Thr Pro Glu Glu Asp Val
 130 135 140
 Leu Arg Arg Asp Phe Thr Ile Asn Gly Leu Phe Tyr Asp Pro Glu His
 145 150 155 160
 Glu Glu Ile Ile Asp Tyr Thr Gly Gly Val Asn Asp Leu Arg Asn Arg
 165 170 175
 Tyr Leu Arg Thr Ile Gly Asp Pro Phe Thr Arg Phe Lys Gln Asp Pro
 180 185 190
 Val Arg Met Leu Arg Leu Leu Lys Ile Leu Ser Arg Ser Pro Phe Thr
 195 200 205
 Val Glu Thr Gln Thr Gln Glu Ala Leu Ile Ala Cys Arg Gln Glu Leu
 210 215 220
 Ile Lys Ser Ser Arg Ala Arg Val Phe Glu Glu Leu Ile Lys Met Leu
 225 230 235 240
 Asn Ser Gly Ala Ala Lys Asn Phe Phe Gln Leu Leu Ile Glu Asn His
 245 250 255
 Leu Leu Glu Ile Leu Phe Pro Tyr Met Asp Lys Ala Phe Arg Leu Asn
 260 265 270
 Arg Ala Leu Glu Glu Gln Thr Ala Thr Tyr Leu Lys Ala Leu Asp Asp
 275 280 285
 Lys Ile Leu Lys Lys Glu Ala Glu Tyr Asp Arg His Gln Leu Met Ala
 290 295 300
 Ile Phe Leu Phe Pro Leu Val Asn Phe Asn Val Arg Tyr Lys His Gln
 305 310 315 320
 Lys His Pro Tyr Leu Ser Leu Thr Ser Val Phe Asp Tyr Ile Lys Asn
 325 330 335
 Phe Leu Glu Gln Phe Phe Ala Asp Ser Phe Thr Ser Cys Ser Lys Lys
 340 345 350
 Asn Phe Ile Leu Thr Ala Leu Ile Leu Gln Met Gln Tyr Arg Leu Thr
 355 360 365
 Pro Leu Ile Pro Thr Lys Lys Ala Leu Phe Phe Asn Lys Lys Leu Leu
 370 375 380
 His His Thr Arg Phe Leu Glu Ala Leu Ser Leu Leu Glu Ile Arg Ser
 385 390 395 400
 Ile Val Tyr Pro Lys Leu Asp Lys Val Tyr Val Ala Trp Ile Arg His
 405 410 415
 His Gln Thr Leu Lys Cys Lys Lys Asp Ser His Ser Gln Lys
 420 425 430

<210>1039

<211>395

<212>PRT

<213>Chlamydia pneumoniae

<400>1039

Glu Arg Ile Asp Cys Trp Leu Asn Ser Met Gly Ile Glu Thr Leu Val
 1 5 10 15
 Leu Gly Pro Ile Pro Thr Pro Gly Val Ala Phe Ile Thr Arg Ala Tyr
 20 25 30
 Arg Ala Asp Ala Gly Ile Met Ile Ser Ala Ser His Asn Pro Tyr Arg
 35 40 45
 Asp Asn Gly Ile Lys Ile Phe Ser Leu Glu Gly Phe Lys Ile Ser Asp
 50 55 60
 Val Leu Glu Gln Arg Ile Glu Thr Met Val Ser Glu Ala Asp Phe Gly

65 70 75 80
 Pro Leu Pro Glu Asp His Ala Val Gly Lys Asn Lys Arg Val Ile Asp
 85 90 95
 Ala Met Gly Arg Tyr Val Glu Phe Val Lys Ala Thr Phe Pro Lys Gly
 100 105 110
 Arg Thr Leu Lys Gly Leu Lys Ile Val Leu Asp Cys Ala His Gly Ala
 115 120 125
 Ser Tyr Lys Val Ala Pro Ser Val Phe Glu Glu Leu Asp Ala Glu Val
 130 135 140
 Ile Cys Tyr Gly Cys Glu Pro Thr Gly Ile Asn Ile Asn Glu His Cys
 145 150 155 160
 Gly Ala Leu Phe Pro Gln Val Ile Gln Lys Ala Val Ile Glu His Gln
 165 170 175
 Ala His Leu Gly Ile Ala Leu Asp Gly Asp Gly Asp Arg Ile Ile Met
 180 185 190
 Val Asp Glu Lys Gly His Ile Val Asp Gly Asp Met Ile Leu Ser Ile
 195 200 205
 Cys Ala Gly Asp Leu Lys Lys Arg Ser Ala Leu Pro His Asn Arg Val
 210 215 220
 Val Ala Thr Ile Met Thr Asn Phe Gly Val Leu Lys Tyr Leu Glu Gly
 225 230 235 240
 Leu Gly Leu Gln Val Phe Thr Ser Pro Val Gly Asp Arg His Val Leu
 245 250 255
 His Ala Met Leu Glu His Glu Val Thr Xaa Gly Gly Glu Gln Ser Gly
 260 265 270
 His Met Ile Phe Leu Asp Tyr Asn Thr Thr Gly Asp Gly Ile Val Ser
 275 280 285
 Ala Leu Gln Val Leu Arg Ile Met Ile Glu Ser Glu Ser Met Leu Ser
 290 295 300
 Asp Leu Thr Ala Pro Ile Val Lys Ser Pro Gln Thr Leu Ile Asn Val
 305 310 315 320
 Ala Val Arg Glu Lys Ile Pro Leu Glu Thr Ile Pro Leu Ile Glu Arg
 325 330 335
 Thr Leu Arg Asp Val Gln Asp Ala Leu Gly Pro Ser Gly Arg Ile Leu
 340 345 350
 Leu Arg Tyr Ser Gly Thr Glu Asn Ile Cys Arg Val Met Val Glu Gly
 355 360 365
 His Lys Lys His Gln Val Asp Cys Leu Ala Lys Ala Leu Ala Asp Val
 370 375 380
 Ile Asp Ala Glu Leu Gly Thr Gly Ser Arg Glu
 385 390 395
 <210>1040
 <211>161
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1040
 Met Cys Gly Ile Phe Gly Tyr Leu Gly Asn Gln Asp Gly Val Ser Ile
 1 5 10 15
 Val Leu Glu Gly Leu Ala Lys Leu Glu Tyr Arg Gly Tyr Asp Ser Ala
 20 25 30
 Gly Leu Ala Ala Val Val Glu Gln Glu Leu Phe Ile Arg Lys Thr Val
 35 40 45
 Gly Arg Val Gln Glu Leu Ser Asn Leu Phe Gln Glu Arg Glu Ile Pro
 50 55 60
 Thr Ala Ser Val Ile Gly His Thr Arg Trp Ala Thr His Gly Val Pro
 65 70 75 80
 Thr Glu Ile Asn Ala His Pro His Val Asp Glu Gly Arg Ser Cys Ala
 85 90 95
 Val Val His Asn Gly Ile Ile Glu Asn Phe Lys Glu Leu Arg Arg Glu
 100 105 110
 Leu Thr Ala Gln Gly Ile Ser Phe Ala Ser Asp Thr Asp Ser Glu Ile
 115 120 125
 Ile Val Gln Leu Phe Ser Leu Tyr Tyr Gln Glu Ser Gln Asp Leu Val
 130 135 140

Phe Ser Phe Cys Gln Thr Leu Ala Gln Leu Arg Gly Ser Val Ala Ala
 145 150 155 160
 Leu

<210>1041

<211>307

<212>PRT

<213>Chlamydia pneumoniae

<400>1041

Arg Ser Cys Ala Leu Ile His Lys Asp His Pro His Thr Ile Leu Cys
 1 5 10 15
 Ala Ser Gln Glu Ser Pro Leu Ile Leu Gly Leu Gly Lys Glu Glu Thr
 20 25 30
 Phe Ile Ala Ser Asp Ser Arg Ala Phe Phe Lys Tyr Thr Arg His Ser
 35 40 45
 Gln Ala Leu Ala Ser Gly Glu Phe Ala Ile Val Ser Gln Gly Lys Glu
 50 55 60
 Pro Glu Val Tyr Asn Leu Glu Leu Lys Lys Ile His Lys Asp Val Arg
 65 70 75 80
 Gln Ile Thr Cys Ser Glu Asp Ala Ser Asp Lys Ser Gly Tyr Gly Tyr
 85 90 95
 Tyr Met Leu Lys Glu Ile Tyr Asp Gln Pro Glu Val Leu Glu Gly Leu
 100 105 110
 Ile Gln Lys His Met Asp Glu Glu Gly His Ile Leu Ser Glu Phe Leu
 115 120 125
 Ser Asp Val Pro Ile Lys Ser Phe Lys Glu Ile Thr Ile Val Ala Cys
 130 135 140
 Gly Ser Ser Tyr His Ala Gly Tyr Leu Ala Lys Tyr Ile Ile Glu Ser
 145 150 155 160
 Leu Val Ser Ile Pro Val His Ile Glu Val Ala Ser Glu Phe Arg Tyr
 165 170 175
 Arg Arg Pro Tyr Ile Gly Lys Asp Thr Leu Gly Ile Leu Ile Ser Gln
 180 185 190
 Ser Gly Glu Thr Ala Asp Thr Leu Ala Ala Leu Lys Glu Leu Arg Arg
 195 200 205
 Arg Asn Ile Ala Tyr Leu Leu Gly Ile Cys Asn Val Pro Glu Ser Ala
 210 215 220
 Ile Ala Leu Gly Val Asp His Cys Leu Phe Leu Glu Ala Gly Val Glu
 225 230 235 240
 Ile Gly Val Ala Thr Thr Lys Ala Phe Thr Ser Gln Leu Leu Leu Leu
 245 250 255
 Val Phe Leu Gly Leu Lys Leu Ala Asn Val His Gly Ala Leu Thr His
 260 265 270
 Ala Glu Gln Cys Ser Phe Gly Gln Gly Leu Gln Ser Leu Pro Asp Leu
 275 280 285
 Cys Gln Lys Leu Leu Ala Gln Arg Val Ser Pro Phe Leu Gly Ala Ala
 290 295 300
 Leu Leu Leu

305

<210>1042

<211>182

<212>PRT

<213>Chlamydia pneumoniae

<400>1042

Leu Thr Gln Asn Asn Val Pro Leu Ala Arg Asp Tyr Lys Ala Tyr Gln
 1 5 10 15
 Ile Ser Val Lys Asn Phe Leu Pro Asn Glu Ser Leu His Ser Trp Ala
 20 25 30
 Gln Pro Tyr Ser Tyr Glu Asp Lys Phe Leu Phe Leu Gly Arg Arg Leu
 35 40 45
 Met Tyr Pro Val Val Met Glu Ala Ala Leu Lys Leu Lys Glu Ile Ala
 50 55 60
 Tyr Ile Glu Ala Asn Ala Tyr Pro Gly Gly Glu Met Lys His Gly Pro
 65 70 75 80

WO 99/27105

PCT/IB98/01890

Ile Ala Leu Ile Ser Lys Gly Thr Pro Val Ile Ala Phe Cys Gly Asp
 85 90 95
 Asp Ile Val Tyr Glu Lys Met Ile Gly Asn Met Met Glu Val Lys Ala
 100 105 110
 Arg His Ala His Val Ile Ala Ile Ala Pro Glu Ser Arg Glu Asp Ile
 115 120 125
 Ala Ala Val Ser Asp Gln Gln Ile Phe Val Pro Asp Cys His Phe Leu
 130 135 140
 Ala Ala Pro Val Leu Tyr Thr Ile Val Gly Gln Val Met Ala Tyr Ala
 145 150 155 160
 Met Ala Leu Ala Lys Gly Met Glu Ile Asp Cys Pro Arg Asn Leu Ala
 165 170 175
 Lys Ser Val Thr Val Glu
 180

<210>1043

<211>259

<212>PRT

<213>Chlamydia pneumoniae

<400>1043

Ser His Asp Leu Asp Xaa Arg Ile Lys Glu Pro Ser Glu His Ala Phe
 1 5 10 15
 Tyr Gly Gly Ile Tyr Phe Arg Ser Cys Arg Gln Asp Phe Tyr Met Pro
 20 25 30
 Cys Leu Leu Val Ser Leu Leu Leu Pro Thr Asp Cys Tyr Phe Cys Glu
 35 40 45
 Gly Gly Asn Ile Leu Cys Arg Val Phe Asn Cys Gln Asn Leu Gly Ile
 50 55 60
 Ser Trp Ile Arg His Leu Gly Pro Leu Gly Phe Ala Ile Leu Met Gly
 65 70 75 80
 Pro Ile Ile Met Ala Gly Thr Lys Val Ile Asp Tyr Cys Asn Arg Phe
 85 90 95
 Phe Met Phe Gly Leu Thr Val Ala Phe Gly Ile Phe Cys Ala Leu Gly
 100 105 110
 Phe Leu Lys Ile Gln Pro Ser Phe Leu Val Arg Ser Ser Trp Leu Thr
 115 120 125
 Thr Ile Asn Ala Phe Pro Val Phe Phe Leu Ala Phe Gly Phe Gln Ser
 130 135 140
 Ile Ile Pro Thr Leu Tyr Tyr Tyr Met Asp Lys Lys Val Gly Asp Val
 145 150 155 160
 Lys Lys Ala Ile Leu Ile Gly Thr Leu Ile Pro Leu Val Leu Tyr Val
 165 170 175
 Leu Trp Glu Val Val Val Leu Gly Ala Val Ser Leu Pro Ile Leu Ser
 180 185 190
 Gln Ala Lys Ile Gly Gly Tyr Thr Ala Val Glu Ala Leu Lys Gln Ala
 195 200 205
 His Arg Ser Trp Ala Phe Tyr Ile Ala Gly Glu Leu Phe Gly Phe Phe
 210 215 220
 Ala Leu Val Ser Ser Phe Val Gly Val Ala Leu Gly Val Met Asp Phe
 225 230 235 240
 Leu Ala Asp Gly Leu Lys Trp Asn Lys Lys Ser His Pro Asn Phe Gln
 245 250 255
 Phe Ser Phe

<210>1044

<211>241

<212>PRT

<213>Chlamydia pneumoniae

<400>1044

Glu Gly Ser Met Gly Leu Tyr Asp Arg Asp Tyr Ile Gln Asp Ser Arg
 1 5 10 15
 Val Gln Gly Thr Phe Ala Ser Arg Val Tyr Gly Trp Met Thr Ala Gly
 20 25 30
 Leu Ile Val Thr Ser Cys Val Ala Leu Gly Leu Tyr Phe Ser Gly Leu
 35 40 45

Tyr Arg Ser Leu Phe Ser Phe Trp Trp Val Trp Cys Phe Ala Thr Leu
 50 55 60
 Gly Val Ser Phe Phe Ile Asn Ser Lys Ile Gln Thr Leu Ser Val Ser
 65 70 75 80
 Ala Val Gly Gly Leu Phe Leu Leu Tyr Ser Thr Leu Glu Gly Met Phe
 85 90 95
 Phe Gly Thr Leu Leu Pro Val Tyr Ala Ala Gln Tyr Gly Gly Gly Val
 100 105 110
 Ile Trp Ala Ala Phe Gly Ser Ala Ala Leu Val Phe Gly Leu Ala Ala
 115 120 125
 Val Tyr Gly Ala Phe Thr Lys Ser Asp Leu Thr Lys Ile Ser Lys Ile
 130 135 140
 Met Thr Phe Ala Leu Ile Gly Leu Leu Leu Val Thr Leu Val Phe Ala
 145 150 155 160
 Val Val Ser Met Phe Val Ser Met Pro Leu Ile Tyr Leu Leu Ile Cys
 165 170 175
 Tyr Leu Gly Leu Val Ile Phe Val Gly Leu Thr Ala Ala Asp Ala Gln
 180 185 190
 Ala Ile Arg Arg Ile Ser Ser Thr Ile Gly Asp Asn Asn Thr Leu Ser
 195 200 205
 Tyr Lys Leu Ser Leu Met Phe Ala Leu Lys Met Tyr Cys Asn Val Ile
 210 215 220
 Met Val Phe Trp Tyr Leu Leu Gln Ile Phe Ser Ser Gly Asn Arg
 225 230 235 240
 Asp

<210>1045

<211>316

<212>PRT

<213>Chlamydia pneumoniae

<400>1045

Arg Cys Ile Asn Asn Ser Leu Leu Phe Pro Ser Tyr Leu Val Ser Phe
 1 5 10 15
 Leu Leu Leu Gln Leu Thr Leu Leu Leu Ala Met Phe Lys Phe Phe Arg
 20 25 30
 Asn Lys Leu Gln Ser Leu Phe Lys Lys Asn Ile Ser Leu Asp Leu Ile
 35 40 45
 Glu Asp Ala Glu Ser Leu Phe Tyr Glu Ala Asp Phe Gly Thr Glu Leu
 50 55 60
 Thr Glu Glu Leu Cys Ala Arg Leu Arg Arg Thr Lys Lys Ala Asp Ala
 65 70 75 80
 Ser Thr Ile Lys Asp Leu Ile Thr Val Leu Arg Glu Ser Leu Glu
 85 90 95
 Gly Leu Pro Ser Gln Ala Ser Gln Ser Ser Gln Thr Arg Pro Ile Val
 100 105 110
 Ser Leu Leu Leu Gly Thr Asn Gly Ser Gly Lys Thr Thr Thr Ala Ala
 115 120 125
 Lys Leu Ala His Tyr Tyr Lys Glu Arg Ser Glu Ser Val Met Leu Val
 130 135 140
 Ala Thr Asp Thr Phe Arg Ala Ala Gly Met Asp Gln Ala Arg Leu Trp
 145 150 155 160
 Ala Asn Glu Leu Gly Cys Gly Phe Val Ser Gly Gln Pro Gly Gly Asp
 165 170 175
 Ala Ala Ala Ile Ala Phe Asp Gly Ile Gln Ser Ala Ile Ala Arg Gly
 180 185 190
 Tyr Ser Arg Val Ile Ile Asp Thr Ser Gly Arg Leu His Val His Gly
 195 200 205
 Asn Leu Met Lys Glu Leu Ser Lys Ile Val Ser Val Cys Gly Lys Ala
 210 215 220
 Leu Glu Gly Ala Pro His Glu Ile Phe Met Thr Val Asp Ser Thr Leu
 225 230 235 240
 Gly Asn Asn Ala Ile Glu Gln Val Arg Val Phe His Asp Val Val Pro
 245 250 255
 Leu Ser Gly Leu Ile Phe Thr Lys Val Asp Gly Ser Ala Lys Gly Gly

WO 99/27105

PCT/IB98/01890

260 265 270
 Thr Leu Phe Gln Ile Ala Lys Arg Leu Lys Ile Pro Thr Lys Phe Ile
 275 280 285
 Gly Tyr Gly Glu Ser Leu Lys Asp Leu Asn Glu Phe Asp Leu Asp Leu
 290 295 300
 Phe Leu Asn Lys Leu Phe Pro Glu Val Glu Lys Ile
 305 310 315
 <210>1046
 <211>386
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1046
 Met His Leu His Glu Tyr Gln Ala Lys Asp Leu Leu Ala Ser Tyr Asp
 1 5 10 15
 Val Pro Ile Pro Pro Tyr Trp Val Val Ser Ser Glu Glu Glu Gly Glu
 20 25 30
 Leu Leu Ile Thr Lys Ser Gly Leu Asp Ser Ala Val Val Lys Val Gln
 35 40 45
 Val His Ala Gly Gly Arg Gly Lys His Gly Gly Val Ile Val Ala Lys
 50 55 60
 Ser Ser Ala Gly Ile Leu Gln Ala Val Ala Lys Leu Leu Gly Met His
 65 70 75 80
 Phe Thr Ser Asn Gln Thr Ala Asp Gly Phe Leu Pro Val Glu Lys Val
 85 90 95
 Leu Ile Ser Pro Leu Val Ala Ile Gln Arg Glu Tyr Tyr Val Ala Val
 100 105 110
 Ile Met Asp Arg Lys His Arg Cys Pro Val Leu Met Leu Ser Lys Ala
 115 120 125
 Gly Gly Met Asp Ile Glu Glu Val Ala His Ser Ser Pro Glu Gln Ile
 130 135 140
 Leu Thr Leu Pro Leu Thr Ser Tyr Gly His Ile Tyr Ser Tyr Gln Leu
 145 150 155 160
 Arg Gln Ala Thr Lys Phe Met Glu Trp Glu Gly Glu Val Met His Gln
 165 170 175
 Gly Val Gln Leu Ile Lys Lys Leu Ala Lys Cys Phe Tyr Glu Asn Asp
 180 185 190
 Val Ser Leu Leu Glu Ile Asn Pro Leu Val Leu Thr Leu Glu Gly Glu
 195 200 205
 Leu Leu Val Leu Asp Ser Lys Ile Thr Ile Asp Asp Asn Ala Leu Tyr
 210 215 220
 Arg His Pro Asn Leu Glu Val Leu Tyr Asp Pro Ser Gln Glu Asn Val
 225 230 235 240
 Arg Asp Val Leu Ala Lys Gln Ile Gly Leu Ser Tyr Ile Ala Leu Ser
 245 250 255
 Gly Asn Ile Gly Cys Ile Val Asn Gly Ala Gly Leu Ala Met Ser Thr
 260 265 270
 Leu Asp Ile Leu Lys Leu His Gly Gly Asn Ala Ala Asn Phe Leu Asp
 275 280 285
 Val Gly Gly Gly Ala Ser Gln Lys Gln Ile Gln Glu Ala Val Ser Leu
 290 295 300
 Val Leu Ser Asp Glu Ser Val Lys Val Leu Phe Ile Asn Ile Phe Gly
 305 310 315 320
 Xaa Ile Met Asp Cys Ser Val Val Ala Ser Gly Leu Val Ala Val Met
 325 330 335
 Glu Thr Arg Asp Gln Val Val Pro Thr Val Ile Arg Leu Glu Gly Thr
 340 345 350
 Asn Val Glu Leu Gly Lys Glu Ile Val Gln Gln Ser Gly Ile Pro Cys
 355 360 365
 Gln Phe Val Ser Ser Met Glu Gly Ala Arg Arg Ala Val Glu Leu
 370 375 380
 Ser Met
 385
 <210>1047
 <211>300

<212>PRT

<213>Chlamydia pneumoniae

<400>1047

Val Cys Arg Phe Arg Arg Tyr Met Phe His Ser Leu Ser Lys Asn Thr
 1 5 10 15
 Pro Ile Ile Thr Gln Gly Ile Thr Gly Lys Ala Gly Ser Phe His Thr
 20 25 30
 Glu Gln Cys Leu Ala Tyr Gly Thr Asn Phe Val Gly Gly Val Thr Pro
 35 40 45
 Gly Lys Gly Gly Thr Leu Trp Leu Asp Leu Pro Val Tyr Asp Ser Val
 50 55 60
 Leu Glu Ala Lys Gln Ala Thr Gly Cys Arg Ala Thr Met Ile Phe Val
 65 70 75 80
 Pro Pro Pro Tyr Ala Ala Glu Ala Ile Leu Glu Ala Glu Glu Ala Gly
 85 90 95
 Ile Glu Leu Ile Val Cys Ile Thr Glu Gly Ile Pro Val Arg Asp Met
 100 105 110
 Leu Glu Val Ala Arg Val Met Asp Asn Ser Thr Ser Gln Leu Ile Gly
 115 120 125
 Pro Asn Cys Pro Gly Ile Ile Lys Pro Gly Glu Cys Lys Ile Gly Ile
 130 135 140
 Met Pro Gly Tyr Ile His Leu Pro Gly Asn Ile Gly Val Val Ser Arg
 145 150 155 160
 Ser Gly Thr Leu Thr Tyr Glu Ala Val Trp Gln Leu Thr Gln Leu Lys
 165 170 175
 Ile Gly Gln Ser Ile Cys Val Gly Ile Gly Gly Asp Pro Leu Asn Gly
 180 185 190
 Thr Ser Phe Ile Asp Val Leu Gln Ala Leu Glu Glu Asp Pro Tyr Thr
 195 200 205
 Glu Leu Ile Leu Met Ile Gly Glu Ile Gly Gly Ser Ala Glu Glu Glu
 210 215 220
 Ala Ala Ala Trp Ile Gln Ala His Cys Thr Lys Pro Val Val Ala Phe
 225 230 235 240
 Ile Ala Gly Val Thr Ala Pro Lys Gly Lys Arg Met Gly His Ala Gly
 245 250 255
 Ala Ile Ile Ser Gly Asn Ser Gly Asp Ala Lys Ser Lys Ile Gln Val
 260 265 270
 Leu Arg Glu Ser Gly Val Thr Val Val Glu Ser Pro Ala His Ile Gly
 275 280 285
 Lys Thr Val Asp Ala Val Leu Arg Ala Lys Glu Leu
 290 295 300

<210>1048

<211>369

<212>PRT

<213>Chlamydia pneumoniae

<400>1048

Ile Leu Met Leu Val Tyr Cys Phe Asp Pro Ser Val Pro Thr Ser Pro
 1 5 10 15
 Glu His Arg Leu Met Ala Ala Leu Asp Arg Trp Phe Phe Leu Gly Gly
 20 25 30
 His Arg Val Arg Ile Leu Thr Leu Glu Gly Asn His Tyr Arg Ala Phe
 35 40 45
 Gln Glu Asn Met Ser Ile Ser Thr Val Glu Lys Ile Leu Lys Leu Ile
 50 55 60
 Ser Tyr Leu Leu Ile Pro Ile Val Leu Ile Ala Leu Leu Ile Arg Cys
 65 70 75 80
 Phe Leu His Ser Arg Phe Lys Cys Asn Trp Lys Cys Asp Ser Leu Ser
 85 90 95
 Asp Ala Arg Val Pro His Asp Val Gln Pro Phe Asn Asp Phe Gln Leu
 100 105 110
 Phe Asn Asn Gln Glu Arg Leu Asn Ile Trp Lys Asn Arg Arg Tyr Val
 115 120 125
 Ser Gly Ile Asp Val Leu Met Val Pro Val Asp Tyr Leu Arg Ser Gln
 130 135 140

Phe Pro Gly Phe Lys Glu Ile Pro Glu Ala Ile Arg Cys Glu Asn Tyr
 145 150 155 160
 Val Ser Asp Gly Gln Phe Ser Glu Glu Ser Lys Thr Ser Tyr Leu Arg
 165 170 175
 Ala Met Leu Thr Asp Ile Val Gly Tyr Ile Leu Ser Leu Asp Glu Thr
 180 185 190
 Tyr Trp Thr Asn Val Ile Leu Lys Ile Arg Ala Met Cys Ile Thr Phe
 195 200 205
 Glu Ser Phe Pro Gly Lys Glu Ala Asp Pro Asn Tyr Ser Pro Arg Val
 210 215 220
 Thr His His Tyr Phe Asp Glu Ser Trp Lys Ala Leu Ala Arg His Val
 225 230 235 240
 Leu Gly Glu Gly Asn Met Val Asn Arg Leu Asp Glu Ala Leu Ile Arg
 245 250 255
 Thr Glu Lys Pro Gly Lys Glu Gly Glu Cys Ile Thr Lys Gln Phe Leu
 260 265 270
 Lys Asp Tyr Cys Lys Lys His Leu Glu Val Met Ser Cys Pro Asp Phe
 275 280 285
 Ile Glu Ser Leu Val Asp Glu Lys Ile Arg Glu Phe Arg Cys Pro Ser
 290 295 300
 Ile Leu Asn Ser Ala Val Cys Asp Val Ile Asp Arg Lys Cys Gln Glu
 305 310 315 320
 His Leu Leu Lys Ala Ile Ile Asn Glu Ala Asn Arg Arg Leu Pro Gly
 325 330 335
 Met Lys Asn Ser Ser Phe Thr Met Arg Gly Asn Gln Val Leu Phe Tyr
 340 345 350
 Thr Ile Phe Ser Pro Pro Lys Leu Pro Pro Ala Ala Ser Ser Val Tyr
 355 360 365
 Phe

<210>1049

<211>358

<212>PRT

<213>Chlamydia pneumoniae

<400>1049

Leu Tyr Ile Asn Gln Phe Ala Asn Ile Leu Lys Ser Ser Phe Leu Met
 1 5 10 15
 Glu Val Tyr Ser Phe Ser Pro Ser Val Arg Thr Ser Phe Gln His Arg
 20 25 30
 Val Met Ala Ala Leu Asp Asn Trp Phe Phe Leu Gly Gly Arg Arg Leu
 35 40 45
 Lys Val Val Ser Leu Asp Ser Cys Asn Ser Gly Gln Ala Cys Glu Glu
 50 55 60
 Tyr Val Pro Ile Ser Thr Thr Glu Lys Val Leu Lys Ile Leu Ser Tyr
 65 70 75 80
 Leu Leu Ile Pro Ile Val Ile Ile Ala Leu Leu Ile Arg Tyr Leu Leu
 85 90 95
 His Ser Asn Phe Thr Ala Lys Val Ser Gln Lys Pro Trp Leu Lys Thr
 100 105 110
 Leu Gln Leu Gly Ile Asp Ile Lys Ser Phe Ile Leu Pro Gly Ser His
 115 120 125
 Val Asn Thr Met Asp Ser Ala Thr Leu Phe Lys Ala Ile Arg Leu Glu
 130 135 140
 Gly Lys Arg Val Asp Val Glu Tyr His Arg Leu His Ser Ser Asp Lys
 145 150 155 160
 Val Val Phe Tyr Ile Pro Ala Gln Lys Leu Pro Asp Asp Leu Arg Leu
 165 170 175
 Thr His Trp Leu Pro Glu Lys Glu Thr Arg Lys Thr Glu Tyr Val Arg
 180 185 190
 His Met Leu Ala His Val Met Gly Tyr Leu Thr Ser Gln Gly Lys Glu
 195 200 205
 Arg Leu Gln Gln Val Val Gln Asp Ser Arg Ser Ser Thr Ser Leu Gly
 210 215 220
 Ala Glu Lys Val Leu Gln Tyr Arg Phe Ile Asp His Pro Gln Ser Gln

225 230 235 240
 Gly Glu Phe Gln Arg Leu Leu Asn Glu Asn Ile Thr Thr Lys Gly Ser
 245 250 255
 Glu Asp Lys Glu Val Val Gln Ser Asp Leu Phe Asp Met Ala Phe Gln
 260 265 270
 Cys Trp Trp Pro Gln Phe Ile Ser Val Ile Gln Ser Pro Thr Phe Ser
 275 280 285
 Glu Glu Leu Val His Glu Met Ser Gln Lys Leu Asp Leu Asp Cys Ile
 290 295 300
 Tyr Pro Glu Asp Asp Glu Phe Glu Gln Lys Phe Leu Asn Thr Leu Leu
 305 310 315 320
 Lys Ala Val Leu His His Gly Phe Glu Gly Ile Ser Val Ala Ser Met
 325 330 335
 Gly Val Ile Phe Leu Ile Cys Pro Asp Ser Leu Ala Leu Gln Ile Pro
 340 345 350
 Phe Leu Arg Asn Gln Lys
 355

<210>1050

<211>338

<212>PRT

<213>Chlamydia pneumoniae

<400>1050

Phe Ser Pro Ala Val Arg Thr Ser Phe Gln His Arg Val Met Ala Ala
 1 5 10 15
 Leu Asp Ala Trp Phe Phe Leu Gly Gly His Arg Leu Lys Val Val Ser
 20 25 30
 Leu Asp Ser Cys Asn Ser Gly Trp Ala Tyr Gln Glu Leu Val Ser Ile
 35 40 45
 Ser Thr Thr Glu Lys Val Leu Lys Leu Leu Ser Tyr Leu Leu Val Pro
 50 55 60
 Ile Val Ile Ile Ala Leu Leu Ile Arg Cys Leu Leu His Ser Asn Phe
 65 70 75 80
 Arg Ile Asp Val Glu Lys Glu Arg Trp Leu Lys Ile Arg Glu Leu Gly
 85 90 95
 Ile Asp Ile Glu Ser Cys Lys Leu Pro Ser Ser Tyr Val Asn Gln Val
 100 105 110
 Ser Ser Phe Ile Trp Phe Glu Lys Asp Lys Ser Lys Arg Pro Arg Ile
 115 120 125
 Asp Val Asp Tyr His Thr Leu His Ser Lys Asp Trp Val Val Phe Pro
 130 135 140
 Ile Val Phe Gln Lys Ile Pro Lys Thr Ser Arg Phe Ser Tyr Trp Phe
 145 150 155 160
 Ser Gln Lys Glu Thr Arg Lys Arg Asp Tyr Val Arg Asn Met Leu Asp
 165 170 175
 His Val Ile Gly Tyr Leu Thr Ser Glu Gly Gly Glu Trp Leu Gln Tyr
 180 185 190
 Ile Ser Lys Thr Ser Tyr Gln Ser Ala Thr Ser Leu Asp Pro Glu Arg
 195 200 205
 Val Leu Gln Tyr Cys Leu Thr Asp Asn Gln Glu Leu Gln Gly Glu Val
 210 215 220
 Gln Arg Leu Leu Asn Glu Ser Ala Thr Lys Ser Ser Gly Asp Lys
 225 230 235 240
 Glu Val Leu Leu Ser His Val Ser Asp Ile Ile Cys Gln Cys Trp Trp
 245 250 255
 Pro Lys Phe Leu Glu Val Ile Gln Ser Pro Ala Phe Ile Glu Glu Leu
 260 265 270
 Val Glu Glu Val Ser Gly Lys Leu Asn Leu Asp Phe Leu Cys Leu Glu
 275 280 285
 Lys Ala Asn Thr Leu Asp Gln Glu Leu Arg Asn Ser Leu Leu Arg Ala
 290 295 300
 Val Val His His Gly Ser Glu Gly Val Asp Ile Lys Lys Val Gly Ala
 305 310 315 320
 Gly Leu Ile Ile Tyr Thr Glu Ala Ile Gln Leu Gln Ile Pro Phe Ser
 325 330 335

Arg Ser

<210>1051

<211>245

<212>PRT

<213>Chlamydia pneumoniae

<400>1051

Gly Ile Asp Met Ile Thr Lys Gln Leu Arg Ser Trp Leu Ala Val Leu
 1 5 10 15
 Val Gly Ser Ser Leu Leu Ala Leu Pro Leu Ser Gly Gln Ala Val Gly
 20 25 30
 Lys Lys Glu Ser Arg Val Ser Glu Leu Pro Gln Asp Val Leu Leu Lys
 35 40 45
 Glu Ile Ser Gly Gly Phe Ser Lys Val Ala Thr Lys Ala Thr Pro Ala
 50 55 60
 Val Val Tyr Ile Glu Ser Phe Pro Lys Ser Gln Ala Val Thr His Pro
 65 70 75 80
 Ser Pro Gly Arg Arg Gly Pro Tyr Glu Asn Pro Phe Asp Tyr Phe Asn
 85 90 95
 Asp Glu Phe Phe Asn Arg Phe Phe Gly Leu Pro Ser Gln Arg Glu Lys
 100 105 110
 Pro Gln Ser Lys Glu Ala Val Arg Gly Thr Gly Phe Leu Val Ser Pro
 115 120 125
 Asp Gly Tyr Ile Val Thr Asn Asn His Val Val Glu Asp Thr Gly Lys
 130 135 140
 Ile His Val Thr Leu His Asp Gly Gln Lys Tyr Pro Ala Thr Val Ile
 145 150 155 160
 Gly Leu Asp Pro Lys Thr Asp Leu Ala Val Ile Lys Ile Lys Ser Gln
 165 170 175
 Asn Leu Pro Tyr Leu Ser Phe Gly Asn Ser Asp His Leu Lys Val Gly
 180 185 190
 Asp Trp Ala Ile Ala Ile Gly Asn Pro Phe Gly Leu Gln Ala Thr Val
 195 200 205
 Thr Val Val Ser Ser Val Leu Lys Glu Glu Ile Asn Ser Thr Leu Gln
 210 215 220
 Ile Leu Lys Ile Leu Phe Arg Gln Met Leu Arg Leu Ile Gln Ala Thr
 225 230 235 240
 Leu Glu Ala Leu Phe
 245

<210>1052

<211>317

<212>PRT

<213>Chlamydia pneumoniae

<400>1052

Ile Pro Lys Pro Pro Val Ser Phe Phe Trp Lys Leu Arg Pro Leu Lys
 1 5 10 15
 Ser Arg Arg Leu Gly Asn Cys Asn Trp Lys Ser Leu Arg Ser Ser Ser
 20 25 30
 Tyr Gly His Arg Ser Val Ile Ser Ala Lys Gly Arg Asn Gln Leu His
 35 40 45
 Ile Ala Asp Phe Glu Asp Phe Ile Gln Thr Asp Ala Ala Ile Asn Pro
 50 55 60
 Gly Asn Ser Gly Gly Pro Leu Leu Asn Ile Asp Gly Gln Val Ile Gly
 65 70 75 80
 Val Asn Thr Ala Ile Val Ser Gly Ser Gly Gly Tyr Ile Gly Ile Gly
 85 90 95
 Phe Ala Ile Pro Ser Leu Met Ala Asn Arg Ile Ile Asp Gln Leu Ile
 100 105 110
 Arg Asp Gly Gln Val Thr Arg Gly Phe Leu Gly Val Thr Leu Gln Pro
 115 120 125
 Ile Asp Ala Glu Leu Ala Ala Cys Tyr Lys Leu Glu Lys Val Tyr Gly
 130 135 140
 Ala Leu Val Thr Asp Val Val Lys Gly Ser Pro Ala Asp Lys Ala Gly
 145 150 155 160

Leu Lys Gln Glu Asp Val Ile Ile Ala Tyr Asn Gly Lys Glu Val Asp
 165 170 175
 Ser Leu Ser Met Phe Arg Asn Ala Val Ser Leu Met Asn Pro Asp Thr
 180 185 190
 Arg Ile Val Leu Lys Val Val Arg Glu Gly Lys Val Ile Glu Ile Pro
 195 200 205
 Val Thr Val Ser Gln Ala Pro Lys Glu Asp Gly Met Ser Ala Leu Gln
 210 215 220
 Arg Val Gly Ile Arg Val Gln Asn Leu Thr Pro Glu Thr Ala Lys Lys
 225 230 235 240
 Leu Gly Ile Ala Pro Glu Thr Lys Gly Ile Leu Ile Ile Ser Val Glu
 245 250 255
 Pro Gly Ser Val Ala Ala Ser Ser Gly Ile Ala Pro Gly Gln Leu Ile
 260 265 270
 Leu Ala Val Asn Arg Gln Lys Val Ser Ser Ile Glu Asp Leu Asn Arg
 275 280 285
 Thr Leu Lys Asp Ser Asn Asn Glu Asn Ile Leu Leu Met Val Ser Gln
 290 295 300
 Gly Asp Val Ile Arg Phe Ile Ala Leu Lys Pro Glu Glu
 305 310 315

<210>1053

<211>104

<212>PRT

<213>Chlamydia pneumoniae

<400>1053

Arg Phe Ser Tyr Glu Ile Leu Pro Gly Gly Ser Arg Gly Trp Arg Ser
 1 5 10 15
 Ser Ala Asn Leu Pro Ile Val Lys Val Leu Gln Glu Ile Tyr Ser Asp
 20 25 30
 Leu Tyr Asn Glu Glu Cys Leu Arg Leu Val Met Pro Ala Thr Ile Pro
 35 40 45
 Ile Gly Pro Leu Leu Gly Glu Ala Ala Gln Thr Ser Pro Ile Ile Cys
 50 55 60
 Gly Thr Ser Tyr Leu Ser Asp Asp Ile His Ala Ala Glu Glu His Phe
 65 70 75 80
 Ser Met Asp Gln Leu Lys Lys Gly Phe Leu Ser Ile Cys Gln Leu Leu
 85 90 95
 Asp Lys Leu Pro Lys Ile Lys Glu
 100

<210>1054

<211>393

<212>PRT

<213>Chlamydia pneumoniae

<400>1054

Met Leu Asn His Ala Lys Lys His Ala Lys Pro Tyr Val Leu Ile Phe
 1 5 10 15
 Phe Ser Thr Lys Asp Lys Leu Ser Tyr Cys Asp Ile Ile Phe Asn Asn
 20 25 30
 Cys Ser Gly Lys Pro Met Asn Leu Asp Ser Lys His Phe Asp Ile Asn
 35 40 45
 Ser Ala Asn Phe Leu Glu Glu Phe Ala Lys Phe Ile Ser Phe Pro Ser
 50 55 60
 Ile Ser Ala Asp Ser Asp His Leu Gln Asp Cys Glu Asn Cys Ala His
 65 70 75 80
 Phe Leu Val Asp His Val Asn Lys Ile Phe Asp Val Glu Leu Trp Glu
 85 90 95
 Thr Pro Gly His Pro Pro Ile Ile Tyr Ala Ser Tyr Lys Ser Glu Asp
 100 105 110
 Pro Leu Ser Pro Thr Leu Met Leu Tyr Asn His Tyr Asp Val Gln Pro
 115 120 125
 Ala Gln Leu Ser Asp Gly Trp Lys Gly Asp Pro Phe Ile Leu Arg Glu
 130 135 140
 Glu Asn Gly Asn Leu Tyr Ala Arg Gly Ala Ser Asp Asn Lys Gly Gln
 145 150 155 160

Cys Phe Tyr Thr Leu Lys Ala Leu Gln His Tyr Tyr Glu Ser Gln Gly
 165 170 175
 Asn Phe Pro Leu Asn Ile Ile Trp Leu Ile Glu Gly Glu Glu Ser
 180 185 190
 Gly Ser Leu Ala Leu Phe Thr Trp Leu Glu Lys Lys Lys Glu Ala Leu
 195 200 205
 Arg Ala Asp Tyr Leu Leu Ile Val Asp Gly Gly Phe Leu Ser Glu Lys
 210 215 220
 His Pro Tyr Val Ser Ile Gly Ala Arg Gly Ile Val Ser Met Lys Ile
 225 230 235 240
 Ser Leu Glu Glu Gly Asn Lys Asp Met His Ser Gly Val Leu Gly Gly
 245 250 255
 Ile Ala Tyr Asn Thr Asn Arg Ala Leu Ser Glu Ile Leu Ser Ser Leu
 260 265 270
 His His Pro Asp Asn Ser Ile Ala Ile Glu Gly Phe Tyr Asp Asp Leu
 275 280 285
 Ala Leu Pro Ser Asp Ser Asp Arg Pro Asp Leu Pro Lys Ser Asp Thr
 290 295 300
 Leu Arg Glu Cys Glu Glu Asn Leu Gly Phe Arg Pro Gln Gly Tyr Glu
 305 310 315 320
 Ala Ser Tyr Ser Pro Glu Glu Ser Ala Leu Arg Pro Thr Val Glu Ile
 325 330 335
 Asn Gly Ile Ser Gly Gly Tyr Thr Gly Pro Gly Phe Lys Thr Val Ile
 340 345 350
 Pro Tyr Arg Ala Thr Ala Tyr Leu Ser Cys Arg Leu Val Pro Asn Gln
 355 360 365
 Asp Pro Asp Lys Ala Ala His Gln Val Ile His His Leu Lys Gln Gln
 370 375 380
 Val Pro Ser Ser Leu Lys Val Leu Leu
 385 390

<210>1055

<211>978

<212>PRT

<213>Chlamydia pneumoniae

<400>1055

Val Thr Glu Ser Met Lys Ala Gly Asp Thr Tyr Arg Asn Phe Ile Ile
 1 5 10 15
 Lys Ser Cys Lys Asp Leu Pro Glu Ile Glu Ser Lys Leu Leu Glu Ala
 20 25 30
 Glu His Lys Pro Thr Gly Ala Ser Ile Met Met Ile Val Asn Asn Asp
 35 40 45
 Glu Glu Asn Val Phe Asn Ile Cys Phe Arg Thr Cys Pro Gln Thr Ser
 50 55 60
 Asn Gly Val Ala His Val Leu Glu His Met Val Leu Cys Gly Ser Glu
 65 70 75 80
 Asn Tyr Pro Val Arg Asp Pro Phe Phe Ser Met Thr Arg Arg Ser Leu
 85 90 95
 Asn Thr Phe Ile Asn Ala Phe Thr Gly Pro Asp Phe Thr Cys Tyr Pro
 100 105 110
 Ala Ala Ser Gln Ile Pro Glu Asp Phe Tyr Asn Leu Leu Ser Val Tyr
 115 120 125
 Ile Asp Ala Val Phe His Pro Leu Leu Thr Lys Gln Ser Phe Leu Gln
 130 135 140
 Glu Ala Trp Arg Tyr Glu Phe Asn Ser Glu Asn His Leu Cys Tyr Thr
 145 150 155 160
 Gly Val Val Phe Asn Glu Met Lys Gly Ala Met Met Ser Gly Glu Ala
 165 170 175
 Arg Leu Ser Glu Ala Leu Asn Ala Ala Ile Phe Pro Ser Val Thr Tyr
 180 185 190
 Gly Val Asn Ser Gly Gly Glu Pro Arg Glu Ile Val Thr Leu Ser His
 195 200 205
 Glu Asp Val Arg Ala Phe His Gln Ser Gln Tyr Ser Ile Asn Arg Cys
 210 215 220
 Leu Phe Tyr Phe Tyr Gly Asn Ile Lys Pro Ser Arg His Leu Asp Phe

WO 99/27105

PCT/IB98/01890

225 230 235 240
Leu Glu Glu Lys Leu Leu Arg Gln Ala Thr Lys Leu Glu Lys Gln Ala
245 250 255
Val Ser Val Pro Leu Gln Lys Arg Phe Lys Glu Pro Val Arg Asn Ile
260 265 270
Leu Thr Tyr Pro Val Asp His Gln Glu Glu Asp Lys Val Leu Phe Gly
275 280 285
Ile Ser Trp Leu Thr Cys Ser Ile Leu Glu Gln Gln Glu Leu Leu Ala
290 295 300
Leu His Val Leu Glu Ile Ile Leu Met Gly Thr Asp Ala Ser Pro Leu
305 310 315 320
Lys Ser Arg Leu Leu Lys Ser Gly Phe Cys Lys Gln Thr Glu Met Ser
325 330 335
Ile Glu Asn Asp Ile Arg Glu Ile Pro Met Thr Leu Val Cys Lys Gly
340 345 350
Cys Ser Pro Ala Gly Ala Gln Lys Leu Glu Ala Leu Ile Phe Ala Ser
355 360 365
Leu Glu Glu Ile Ile Arg Glu Gly Ile Ser Glu Asn Ile Val Glu Gly
370 375 380
Ala Val His Gln Leu Glu Leu Ser Arg Lys Glu Ile Thr Gly Tyr Ser
385 390 395 400
Leu Pro Tyr Gly Leu Ser Leu Phe Phe Arg Ser Gly Leu Leu Lys Gln
405 410 415
His Gly Gly Ser Ala Glu Asp Gly Leu Arg Ile His Asn Leu Phe Ser
420 425 430
Glu Leu Arg Asn Ser Leu Lys Asn Ser Asp Tyr Leu Ala Lys Leu Ile
435 440 445
Arg Lys Tyr Phe Leu Asp Asn Pro His Phe Ala Arg Val Ile Leu Leu
450 455 460
Pro Asp Thr Glu Leu Val Ala Lys Asp Asn Lys Asp Glu Gln Gln Leu
465 470 475 480
Leu Leu Ser Val Ser Glu Lys Leu Thr Asp Glu Asn Lys Glu Lys Ile
485 490 495
Gln Gln Asn Val Arg Glu Leu Thr Glu Ser Gln Glu Gln Lys Glu Asp
500 505 510
Leu Asn Gly Ile Leu Pro Asn Leu Ala Leu Asp Lys Val Pro Thr Ser
515 520 525
Gly Lys Glu Phe Pro Leu Ile Lys Glu Gly Leu Ser Gln Gly Glu Val
530 535 540
Leu His His Glu Cys Phe Thr Asn Asp Ile Val Phe Ile Asp Val Val
545 550 555 560
Leu Asp Ile Pro Pro Leu Ser Gly Glu Glu Leu Pro Trp Leu Arg Leu
565 570 575
Leu Val Phe Leu Met Leu Gln Leu Gly Cys Gly Gly Arg Ser Tyr Lys
580 585 590
Glu His Leu Glu Phe Leu Leu Glu His Thr Gly Gly Val Asp Val Ser
595 600 605
Tyr Asp Phe Ser Pro His Ala Asn Lys Asn Ser Phe Leu Ser Pro Ser
610 615 620
Val Ser Ile Arg Gly Lys Ala Leu Ser Ser Lys Ser Glu Lys Leu Cys
625 630 635 640
Gly Ile Val Ser Asp Met Leu Thr Ser Val Asp Phe Thr Asp Ile Pro
645 650 655
Arg Ile Arg Glu Leu Leu Met Gln His Asn Glu Ala Leu Thr Asn Ser
660 665 670
Val Arg Asn Ser Pro Met Ser Tyr Ala Val Ser Met Ala Cys Ser Gly
675 680 685
Asn Ser Ile Thr Gly Ala Met Ser Tyr Leu Thr Thr Gly Leu Pro Tyr
690 695 700
Val Lys Lys Ile Arg Glu Leu Thr Lys Asn Phe Asp Gln Asn Ile Asp
705 710 715 720
Glu Ala Val Val Ile Leu Gln Arg Leu Tyr Thr Lys Cys Phe Ser Gly
725 730 735
Lys Arg Gln Ile Val Ile Ser Gly Ser Ala His Asn Tyr Gln Gln Leu

740 745 750
 Lys Asp Asn Lys Phe Tyr Gly Leu Leu Asp Tyr Leu Ile Val Ile Pro
 755 760 765
 Glu Pro Trp Glu Asn Pro Ser Ile Asn Leu Tyr Val Thr Ser Arg Gly
 770 775 780
 Leu His Ile Pro Ala Arg Ala Ala Phe Asn Ala Leu Ala Phe Pro Ile
 785 790 795 800
 Gly Asp Ile Ala Tyr Asp His Pro Asp Ala Ala Ala Leu Thr Val Ala
 805 810 815
 Ala Glu Ile Leu Asp Asn Val Val Leu His Thr Lys Ile Arg Glu Gln
 820 825 830
 Gly Gly Ala Tyr Gly Ser Gly Ala Ala Ala Asn Leu Ser Arg Gly Ser
 835 840 845
 Phe Tyr Cys Tyr Ser Tyr Arg Asp Pro Glu Ile Ala Thr Thr Tyr Lys
 850 855 860
 Thr Phe Leu Lys Gly Val Ser Glu Ile Ala Ser Gly Asn Phe Thr Lys
 865 870 875 880
 Glu Asp Ile Tyr Glu Gly Ala Leu Gly Val Val Gln Gly Leu Asp Met
 885 890 895
 Pro Val Ala Pro Gly Ser Arg Ala Ser Val Ala Phe Tyr Arg Leu Lys
 900 905 910
 Ser Gly Arg Ile Pro Val Leu Arg Gln Ala Phe Arg Arg Ser Val Leu
 915 920 925
 Glu Val Thr Lys Glu His Ile Cys Met Val Met Asp Lys Tyr Leu Glu
 930 935 940
 Ser Thr Val Gln Glu Thr Thr Leu Ile Ser Phe Ala Gly Glu Glu Met
 945 950 955 960
 Leu Arg Asn Asn Val Leu Thr Leu Asp Lys Asp Phe Pro Ile Val Pro
 965 970 975
 Ala Ile

<210>1056

<211>418

<212>PRT

<213>Chlamydia pneumoniae

<400>1056

Lys Lys Glu Leu Ala Ser Val Met Asn Leu Pro Val Ser Leu Ala Cys
 1 5 10 15
 Leu Leu Leu Ser Gly Cys Val Phe Phe Leu Gly Val Phe Val Ser Ser
 20 25 30
 Ser Leu Tyr Ala Arg Lys Lys Arg Ala Phe Leu Glu Lys Ile Gln Lys
 35 40 45
 Leu Glu His Glu Asn Gln Leu Leu Gln Thr Ser Leu Asn Leu Ser Arg
 50 55 60
 His Gln Glu Gln Leu Ile Glu Asp Phe Ser Asn Arg Leu Ala Leu Ser
 65 70 75 80
 Ser His Lys Leu Ile Lys Asp Met Lys Glu Glu Ala Gln Asn Tyr Phe
 85 90 95
 Gly Asp Thr Ser Lys Ser Phe Gln Ser Ile Leu Ser Pro Ile Gln Thr
 100 105 110
 Thr Leu Thr Thr Phe Lys Gln Ser Leu Glu Thr Phe Glu Thr Lys His
 115 120 125
 Ala Glu Asp Arg Gly Arg Leu Lys Glu Gln Ile Ser Gln Leu Leu Ala
 130 135 140
 Val Glu Lys Lys Leu Glu His Glu Thr His Val Leu Thr Asp Ile Leu
 145 150 155 160
 Lys His Pro Gly Ser Arg Gly Arg Trp Gly Glu Ile Gln Leu Glu Arg
 165 170 175
 Ile Leu Glu Leu Ala Gly Met Leu Lys Tyr Cys Asp Tyr Asp Ser Gln
 180 185 190
 Thr Thr Ser Ala Gln Gly Ala Phe Arg Ala Asp Ile Ile Arg Leu
 195 200 205
 Pro Gln Asp Arg Cys Leu Ile Ile Asp Ala Lys Ala Pro Ile Ser Asp
 210 215 220

Ser Tyr Phe Ser Val Glu Glu Ile Asp Lys Gly Asp Leu Val Asp Lys
 225 230 235 240
 Ile Lys Glu His Ile Lys Thr Leu Lys Ser Lys Ser Tyr Trp Glu Lys
 245 250 255
 Phe His Gln Ser Pro Glu Tyr Val Ile Leu Phe Leu Pro Gly Glu Ser
 260 265 270
 Leu Phe Asn Asp Ala Ile Arg Leu Ala Pro Glu Leu Met Glu Ile Gly
 275 280 285
 Ala Ser Ser Asn Val Ile Leu Ser Ser Pro Leu Thr Leu Leu Ala Leu
 290 295 300
 Leu Lys Thr Ile Ala Tyr Met Trp Lys Gln Glu Asn Leu Gln Lys Gln
 305 310 315 320
 Ile Gln Glu Val Ser Leu Leu Gly Lys Glu Leu His Arg Arg Leu Gln
 325 330 335
 Val Val Phe Thr His Phe Gln Lys Ile Gly Lys Asn Leu Asn Gln Thr
 340 345 350
 Val Gln Ser Tyr Asn Asp Met Thr Ser Ser Phe Gln Tyr Arg Val Leu
 355 360 365
 Pro Thr Leu Arg Lys Phe Glu Gly Leu Glu Thr Ser Ser Ser His Gln
 370 375 380
 Ile Glu Glu Pro Thr Pro Ile Glu Ser Leu Ala Thr Ser Phe Pro His
 385 390 395 400
 Thr Cys Asp Ile Asp Thr Asn Leu Ala Val Ile Glu Ser Leu Glu Lys
 405 410 415
 Gln Asp

<210>1057

<211>265

<212>PRT

<213>Chlamydia pneumoniae

<400>1057

Met Ala Gly Leu Asp Leu Glu Ala Arg Gly Lys Arg Arg Val Val Thr
 1 5 10 15
 Pro Asn Ala Ile Thr Ala Phe Gly Leu Cys Cys Gly Leu Phe Ile Ile
 20 25 30
 Phe Lys Ser Val Leu Arg Thr Ser Ser Val Glu Leu Phe His Arg
 35 40 45
 Leu Gln Gly Leu Ser Leu Leu Leu Ile Ser Ala Met Ile Ala Asp Phe
 50 55 60
 Ser Asp Gly Ala Ile Ala Arg Ile Met Lys Ala Glu Ser Ala Phe Gly
 65 70 75 80
 Ala Gln Phe Asp Ser Leu Ser Asp Ala Val Thr Phe Gly Ile Ala Pro
 85 90 95
 Pro Leu Ile Ala Ile Lys Ser Leu Asp Gly Ile Tyr Val Gly Asn Phe
 100 105 110
 Phe Ser Ser Leu Leu Leu Ile Thr Ser Ile Ile Tyr Ser Leu Cys Gly
 115 120 125
 Val Leu Arg Leu Val Arg Tyr Asn Leu Phe Ser Gln Lys Thr Val Asp
 130 135 140
 Val Ser Lys Pro Tyr Cys Phe Ile Gly Leu Pro Ile Pro Ala Ala Ala
 145 150 155 160
 Ala Ser Ile Val Ser Leu Ala Leu Phe Leu Ala Ser Asp Phe Phe Pro
 165 170 175
 Asp Leu Pro Ala Gln Leu Arg Val Gly Leu Leu Ser Phe Ala Leu Leu
 180 185 190
 Phe Ile Gly Gly Leu Met Ile Ser Pro Trp Lys Phe Pro Gly Val Lys
 195 200 205
 His Phe Arg Phe Asn Val Ser Ser Phe Leu Leu Val Val Thr Ile Gly
 210 215 220
 Leu Ala Ala Cys Leu Phe Phe Ser Gly Leu Val Asp His Phe Val Glu
 225 230 235 240
 Val Phe Phe Leu Val Ser Trp Leu Tyr Thr Leu Val Gly Phe Pro Ile
 245 250 255
 Phe Ser Ile Ile Tyr Arg Lys Lys Ser

260

265

<210>1058

<211>1047

<212>PRT

<213>Chlamydia pneumoniae

<400>1058

Gly Lys Val Met Val Glu Val Glu Glu Lys His Tyr Thr Ile Val Lys
 1 5 10 15
 Arg Asn Gly Met Phe Val Pro Phe Asn Gln Asp Arg Ile Phe Gln Ala
 20 25 30
 Leu Glu Ala Ala Phe Arg Asp Thr Arg Ser Leu Glu Thr Ser Ser Pro
 35 40 45
 Leu Pro Lys Asp Leu Glu Glu Ser Ile Ala Gln Ile Thr His Lys Val
 50 55 60
 Val Lys Glu Val Leu Ala Lys Ile Ser Glu Gly Gln Val Val Thr Val
 65 70 75 80
 Glu Arg Ile Gln Asp Leu Val Glu Ser Gln Leu Tyr Ile Ser Gly Leu
 85 90 95
 Gln Asp Val Ala Arg Asp Tyr Ile Val Tyr Arg Asp Gln Arg Lys Ala
 100 105 110
 Glu Arg Gly Asn Ser Ser Ser Ile Ala Ile Ile Arg Arg Asp Gly
 115 120 125
 Gly Ser Ala Lys Phe Asn Pro Met Lys Ile Ser Ala Ala Leu Glu Lys
 130 135 140
 Ala Phe Arg Ala Thr Leu Gln Ile Asn Gly Met Thr Pro Pro Ala Thr
 145 150 155 160
 Leu Ser Glu Ile Asn Asp Leu Thr Leu Arg Ile Val Glu Asp Val Leu
 165 170 175
 Ser Leu His Gly Glu Glu Ala Ile Asn Leu Glu Glu Ile Gln Asp Ile
 180 185 190
 Val Glu Lys Gln Leu Met Val Ala Gly Tyr Tyr Asp Val Ala Lys Asn
 195 200 205
 Tyr Ile Leu Tyr Arg Glu Ala Arg Ala Arg Ala Arg Ala Asn Lys Asp
 210 215 220
 Gln Asp Gly Gln Glu Glu Phe Val Pro Gln Glu Glu Thr Tyr Val Val
 225 230 235 240
 Gln Lys Glu Asp Gly Thr Thr Tyr Leu Leu Arg Lys Thr Asp Leu Glu
 245 250 255
 Lys Arg Phe Ser Trp Ala Cys Lys Arg Phe Pro Lys Thr Thr Asp Ser
 260 265 270
 Gln Leu Leu Ala Asp Met Ala Phe Met Asn Leu Tyr Ser Gly Ile Lys
 275 280 285
 Glu Asp Glu Val Thr Thr Ala Cys Ile Met Ala Ala Arg Ala Asn Ile
 290 295 300
 Glu Arg Glu Pro Asp Tyr Ala Phe Ile Ala Ala Glu Leu Leu Thr Ser
 305 310 315 320
 Ser Leu Tyr Glu Glu Thr Leu Gly Cys Ser Ser Gln Asp Pro Asn Leu
 325 330 335
 Ser Glu Ile His Lys Lys His Phe Lys Glu Tyr Ile Leu Asn Gly Glu
 340 345 350
 Glu Tyr Arg Leu Asn Pro Gln Leu Lys Asp Tyr Asp Leu Asp Ala Leu
 355 360 365
 Ser Glu Val Leu Asp Leu Ser Arg Asp Gln Gln Phe Ser Tyr Met Gly
 370 375 380
 Val Gln Asn Leu Tyr Asp Arg Tyr Phe Asn Leu His Glu Gly Arg Arg
 385 390 395 400
 Leu Glu Thr Ala Gln Ile Phe Trp Met Arg Val Ser Met Gly Leu Ala
 405 410 415
 Leu Asn Glu Gly Glu Gln Lys Asn Phe Trp Ala Ile Thr Phe Tyr Asn
 420 425 430
 Leu Leu Ser Thr Phe Arg Tyr Thr Pro Ala Thr Pro Thr Leu Phe Asn
 435 440 445
 Ser Gly Met Arg His Ser Gln Leu Ser Ser Cys Tyr Leu Ser Thr Val
 450 455 460

Lys Asp Asp Leu Ser His Ile Tyr Lys Val Ile Ser Asp Asn Ala Leu
 465 470 475 480
 Leu Ser Lys Trp Ala Gly Gly Ile Gly Asn Asp Trp Thr Asp Val Arg
 485 490 495
 Ala Thr Gly Ala Val Ile Lys Gly Thr Asn Gly Lys Ser Gln Gly Val
 500 505 510
 Ile Pro Phe Ile Lys Val Ala Asn Asp Thr Ala Ile Ala Val Asn Gln
 515 520 525
 Gly Gly Lys Arg Lys Gly Ala Met Cys Val Tyr Leu Glu Asn Trp His
 530 535 540
 Leu Asp Tyr Glu Asp Phe Leu Glu Leu Arg Lys Asn Thr Gly Asp Glu
 545 550 555 560
 Arg Arg Arg Thr His Asp Ile Asn Thr Ala Ser Trp Ile Pro Asp Leu
 565 570 575
 Phe Phe Lys Arg Leu Glu Lys Lys Gly Met Trp Thr Leu Phe Ser Pro
 580 585 590
 Asp Asp Val Pro Gly Leu His Glu Ala Tyr Gly Leu Glu Phe Glu Lys
 595 600 605
 Leu Tyr Glu Glu Tyr Glu Arg Lys Val Glu Ser Gly Glu Ile Arg Leu
 610 615 620
 Tyr Lys Lys Val Glu Ala Glu Val Leu Trp Arg Lys Met Leu Ser Met
 625 630 635 640
 Leu Tyr Glu Thr Gly His Pro Trp Ile Thr Phe Lys Asp Pro Ser Asn
 645 650 655
 Ile Arg Ser Asn Gln Asp His Val Gly Val Val Arg Cys Ser Asn Leu
 660 665 670
 Cys Thr Glu Ile Leu Leu Asn Cys Ser Glu Ser Glu Thr Ala Val Cys
 675 680 685
 Asn Leu Gly Ser Ile Asn Leu Val Glu His Ile Arg Asn Asp Lys Leu
 690 695 700
 Asp Glu Glu Lys Leu Lys Glu Thr Ile Ser Ile Ala Ile Arg Ile Leu
 705 710 715 720
 Asp Asn Val Ile Asp Leu Asn Phe Tyr Pro Thr Pro Glu Ala Lys Gln
 725 730 735
 Ala Asn Leu Thr His Arg Ala Val Gly Leu Gly Val Met Gly Phe Gln
 740 745 750
 Asp Val Leu Tyr Glu Leu Asn Ile Ser Tyr Ala Ser Gln Glu Ala Val
 755 760 765
 Glu Phe Ser Asp Glu Cys Ser Glu Ile Ile Ala Tyr Tyr Ala Ile Leu
 770 775 780
 Ala Ser Ser Leu Leu Ala Lys Glu Arg Gly Thr Tyr Ala Ser Tyr Ser
 785 790 795 800
 Gly Ser Lys Trp Asp Arg Gly Tyr Leu Pro Leu Asp Thr Ile Glu Leu
 805 810 815
 Leu Lys Glu Thr Arg Gly Glu His Asn Val Leu Val Asp Thr Ser Ser
 820 825 830
 Lys Lys Asp Trp Thr Pro Val Arg Asp Thr Ile Gln Lys Tyr Gly Met
 835 840 845
 Arg Asn Ser Gln Val Met Ala Ile Ala Pro Thr Ala Thr Ile Ser Asn
 850 855 860
 Ile Ile Gly Val Thr Gln Ser Ile Glu Pro Met Tyr Lys His Leu Phe
 865 870 875 880
 Val Lys Ser Asn Leu Ser Gly Glu Phe Thr Ile Pro Asn Thr Tyr Leu
 885 890 895
 Ile Lys Lys Leu Lys Glu Leu Gly Leu Trp Asp Ala Glu Met Leu Asp
 900 905 910
 Asp Leu Lys Tyr Phe Asp Gly Ser Leu Leu Glu Ile Glu Arg Ile Pro
 915 920 925
 Asn His Leu Lys Lys Leu Phe Leu Thr Ala Phe Glu Ile Glu Pro Glu
 930 935 940
 Trp Ile Ile Glu Cys Thr Ser Arg Arg Gln Lys Trp Ile Asp Met Gly
 945 950 955 960
 Val Ser Leu Asn Leu Tyr Leu Ala Glu Pro Asp Gly Lys Lys Leu Ser
 965 970 975

Asn Met Tyr Leu Thr Ala Trp Lys Lys Gly Leu Lys Thr Thr Tyr Tyr
 980 985 990
 Leu Arg Ser Gln Ala Ala Thr Ser Val Glu Lys Ser Phe Ile Asp Ile
 995 1000 1005
 Asn Lys Arg Gly Ile Gln Pro Arg Trp Met Lys Asn Lys Ser Ala Ser
 1010 1015 1020
 Thr Ser Ile Val Val Glu Arg Lys Thr Thr Pro Val Cys Ser Met Glu
 1025 1030 1035 1040
 Glu Gly Cys Glu Ser Cys Gln
 1045

<210>1059

<211>365

<212>PRT

<213>Chlamydia pneumoniae

<400>1059

Leu Phe Asn Gly Arg Arg Leu Arg Ile Leu Ser Ile Thr Glu Lys Arg
 1 5 10 15
 Gly Ala Lys Met Glu Ala Asp Ile Leu Asp Gly Lys Leu Lys Arg Val
 20 25 30
 Glu Val Ser Lys Lys Gly Leu Val Asn Cys Asn Gln Val Asp Val Asn
 35 40 45
 Gln Leu Val Pro Ile Lys Tyr Lys Trp Ala Trp Glu His Tyr Leu Asn
 50 55 60
 Gly Cys Ala Asn Asn Trp Leu Pro Thr Glu Val Pro Met Ala Arg Asp
 65 70 75 80
 Ile Glu Leu Trp Lys Ser Asp Glu Leu Ser Glu Asp Glu Arg Arg Val
 85 90 95
 Ile Leu Leu Asn Leu Gly Phe Phe Ser Thr Ala Glu Ser Leu Val Gly
 100 105 110
 Asn Asn Ile Val Leu Ala Ile Phe Lys His Ile Thr Asn Pro Glu Ala
 115 120 125
 Arg Gln Tyr Leu Leu Arg Gln Ala Phe Glu Glu Ala Val His Thr His
 130 135 140
 Thr Phe Leu Tyr Ile Cys Glu Ser Leu Gly Leu Asp Glu Gly Glu Val
 145 150 155 160
 Phe Asn Ala Tyr Asn Glu Arg Ala Ser Ile Arg Ala Lys Asp Asp Phe
 165 170 175
 Gln Met Thr Leu Thr Val Asp Val Leu Asp Pro Asn Phe Ser Val Gln
 180 185 190
 Ser Ser Glu Gly Leu Gly Gln Phe Ile Lys Asn Leu Val Gly Tyr Tyr
 195 200 205
 Ile Ile Met Glu Gly Ile Phe Phe Tyr Ser Gly Phe Val Met Ile Leu
 210 215 220
 Ser Phe His Arg Gln Asn Lys Met Thr Gly Ile Gly Glu Gln Tyr Gln
 225 230 235 240
 Tyr Ile Leu Arg Asp Glu Thr Ile His Leu Asn Phe Gly Ile Asp Leu
 245 250 255
 Ile Asn Gly Ile Lys Glu Glu Asn Pro Glu Val Trp Thr Thr Glu Leu
 260 265 270
 Gln Glu Glu Ile Val Ala Leu Ile Glu Lys Ala Val Glu Leu Glu Ile
 275 280 285
 Glu Tyr Ala Lys Asp Cys Leu Pro Arg Gly Ile Leu Gly Leu Arg Ser
 290 295 300
 Ser Met Phe Ile Asp Tyr Val Arg His Ile Ala Asp Arg Arg Leu Glu
 305 310 315 320
 Arg Ile Gly Leu Lys Pro Ile Tyr His Ser Arg Asn Pro Phe Pro Trp
 325 330 335
 Met Ser Glu Thr Met Asp Leu Asn Lys Glu Lys Asn Phe Phe Glu Thr
 340 345 350
 Arg Val Thr Glu Tyr Gln Thr Ala Gly Asn Leu Ser Trp
 355 360 365

<210>1060

<211>228

<212>PRT

<213>Chlamydia pneumoniae

<400>1060

Phe Leu Leu Phe Met Lys Pro Gln Asp Leu Ser Pro Pro Phe Leu Trp
 1 5 10 15
 Lys Glu Arg Arg Pro Cys Ile Gln Asp Gly Val Leu Tyr Val Pro Arg
 20 25 30
 His Tyr Phe Glu His Gln Asn Phe Ser Thr Ser Tyr His Gln Glu Phe
 35 40 45
 Phe Gln Asn His Thr Ser Ile Ala Cys Glu Leu Cys Ser Gly Asn Gly
 50 55 60
 Asp Trp Val Val Ala Gln Ala Gln Lys Asp Pro Gln Val Leu Trp Ile
 65 70 75 80
 Ala Val Glu Gln Arg Phe Asp Arg Val Arg Lys Ile Trp Ser Lys Met
 85 90 95
 Ile Asn His Gln Ile Gln Asn Leu Arg Ile Val Cys Gly Thr Ala Glu
 100 105 110
 Thr Phe Phe Gln Tyr Tyr Val Pro Asp Gln Phe Leu Gln Arg Leu Val
 115 120 125
 Val Asn Phe Pro Asp Pro Trp Pro Lys Met Arg His Arg Lys His Arg
 130 135 140
 Leu Leu Gln Pro Ser Phe Val Gln Glu Ile Ser Arg Ser Leu Gln Asp
 145 150 155 160
 Ser Ala Val Phe Ala Leu Ala Thr Asp Asp Lys Thr Tyr Leu Leu Glu
 165 170 175
 Ser Ile Glu Ala Leu Gln Thr His Leu Ala Pro Arg Met Glu Thr Pro
 180 185 190
 Tyr Tyr Ile Lys Met Thr Asp Thr Tyr Gly Asn Ser Trp Phe Glu Asn
 195 200 205
 Leu Trp Arg Thr Lys Gly Gln Glu Ile Phe Tyr Thr Glu Phe Ile Lys
 210 215 220
 Lys Ala Gly Ile
 225

<210>1061

<211>175

<212>PRT

<213>Chlamydia pneumoniae

<400>1061

Met Phe Ala Tyr Arg Thr Leu Leu Thr His Asn Val Val Gln Val Ser
 1 5 10 15
 His Glu Ile Phe Lys Thr Thr Val Val Pro Gly Asp Thr Val Ile Asp
 20 25 30
 Ala Thr Cys Gly Asn Gly Asn Asp Ser Leu Phe Leu Ala Arg Leu Leu
 35 40 45
 Gln Gly Glu Gly Arg Leu Val Val Tyr Asp Ile Gln Lys Glu Ala Leu
 50 55 60
 Ser Asn Ala Leu Leu Leu Phe Glu Thr His Leu Ser Glu Gln Glu Arg
 65 70 75 80
 Ser Val Ile Glu Met Lys Glu Gln Ser His Glu His Ile Leu Glu Lys
 85 90 95
 Asp Val Lys Leu Ile His Tyr Asn Leu Gly Tyr Leu Pro Lys Gly Asn
 100 105 110
 Lys Glu Ile Thr Thr Leu Ala Arg Thr Thr Glu Ile Ser Leu Glu Tyr
 115 120 125
 Ala Leu Asn Ile Val Arg Pro Asp Gly Leu Ile Thr Val Val Cys Tyr
 130 135 140
 Pro Gly His Pro Glu Gly Glu Lys Glu Thr His Ser Val Glu Ser Leu
 145 150 155 160
 Ala Gln Arg Leu His Pro Lys Glu Trp Cys Val Ser His Phe Met
 165 170 175

<210>1062

<211>97

<212>PRT

<213>Chlamydia pneumoniae

<400>1062

Arg Ser Pro Ile Arg Ser Leu Leu Leu Ala Val Phe Ser Val Ile Leu
 1 5 10 15
 Lys Glu Leu Leu Leu Ala Ser Leu Leu Thr Gln Pro Gly Leu Lys Gly
 20 25 30
 Leu Ala Ile Gly Gly Ala Gln Ile Ser Pro Leu His Ala Asn Phe Ile
 35 40 45
 Ile Asn Thr Gly Lys Ala Thr Ser Asp Glu Val Lys Gln Leu Ile Ala
 50 55 60
 Ile Ile Gln Ser Thr Leu Lys Thr Gln Gly Ile Asp Leu Glu His Glu
 65 70 75 80
 Ile Arg Ile Ile Pro Tyr Gln Pro Lys Ile His Ser Pro Val Ser Glu
 85 90 95
 Lys

<210>1063

<211>263

<212>PRT

<213>Chlamydia pneumoniae

<400>1063

Met Lys Glu Ala Ala Pro Met His Phe Pro Phe Pro Val Arg Arg Ser
 1 5 10 15
 Val Trp Leu Asn Arg Tyr Ser Thr Phe Arg Ile Gly Gly Pro Ala Asn
 20 25 30
 Tyr Phe Lys Ala Ile His Thr Ile Glu Glu Ala Arg Glu Val Ile Arg
 35 40 45
 Phe Leu His Ser Ile Asn Tyr Pro Phe Leu Ile Ile Gly Lys Gly Ser
 50 55 60
 Asn Cys Leu Phe Asp Asp Arg Gly Phe Asp Gly Phe Val Leu Tyr Asn
 65 70 75 80
 Ala Ile Tyr Gly Lys Gln Phe Leu Glu Asp Ala Arg Ile Lys Ala Tyr
 85 90 95
 Ser Gly Leu Ser Phe Ala Ala Leu Gly Lys Ala Thr Ala Tyr Asn Gly
 100 105 110
 Tyr Ser Gly Leu Glu Phe Ala Ala Gly Ile Pro Gly Ser Val Gly Gly
 115 120 125
 Ala Ile Phe Met Asn Ala Gly Thr Asn Glu Ser Asp Ile Ser Ser Val
 130 135 140
 Val Arg Asn Val Glu Thr Ile Asn Ser Glu Gly Glu Leu Cys Ser Tyr
 145 150 155 160
 Ser Val Glu Glu Leu Glu Leu Ser Tyr Arg Ser Ser Arg Phe His Arg
 165 170 175
 Gln Gln Glu Phe Ile Leu Ser Ala Thr Phe Gln Leu Ser Lys Lys Gln
 180 185 190
 Val Ser Ala Asp His Ser Lys Ser Ile Leu Gln His Arg Leu Met Thr
 195 200 205
 Gln Pro Tyr Thr Gln Pro Ser Ala Gly Cys Ile Phe Arg Asn Pro Glu
 210 215 220
 Gly Thr Ser Ala Gly Lys Leu Ile Asp Ala Ala Trp Val Glu Gly Ile
 225 230 235 240
 Ser Asn Arg Arg Gly Thr Asn Phe Ser Val Ala Cys Lys Leu His Tyr
 245 250 255
 Gln Tyr Trp Gln Gly His Phe
 260

<210>1064

<211>179

<212>PRT

<213>Chlamydia pneumoniae

<400>1064

Leu Arg Thr Ser Leu Ala Val Lys Cys Val Leu Leu Thr Ile Phe Trp
 1 5 10 15
 Leu Leu Val Met Ala Thr Leu Ser Pro Glu Lys Phe Ser Gly Ser Pro
 20 25 30
 Ile Ser Ile Ser Lys Glu Phe Pro Gln Gln Lys Met Arg Glu Ile Ile
 35 40 45

Leu Gln Met Leu Tyr Ala Leu Asp Met Ala Pro Ser Ala Glu Asp Ser
 50 55 60
 Leu Val Pro Leu Leu Met Ser Gln Thr Ala Val Ser Gln Lys His Val
 65 70 75 80
 Leu Val Ala Leu Asn Gln Thr Lys Ser Ile Leu Glu Lys Ser Gln Glu
 85 90 95
 Leu Asp Leu Ile Ile Gly Asn Ala Leu Lys Asn Lys Ser Phe Asp Ser
 100 105 110
 Leu Asp Leu Val Glu Lys Asn Val Leu Arg Leu Thr Leu Phe Glu His
 115 120 125
 Phe Tyr Ser Pro Pro Ile Asn Lys Ala Ile Leu Ile Ala Glu Ala Ile
 130 135 140
 Arg Leu Val Lys Lys Phe Ser Tyr Ser Glu Ala Cys Pro Phe Ile Gln
 145 150 155 160
 Ala Ile Leu Asn Asp Ile Phe Thr Asp Ser Ser Leu Asn Glu Asn Ser
 165 170 175
 Leu Ser Ile

<210>1065

<211>187

<212>PRT

<213>Chlamydia pneumoniae

<400>1065

Ser Val Ala Leu Asn Phe Lys Ile Asn Arg Gln Ile Arg Ala Pro Lys
 1 5 10 15
 Val Arg Leu Ile Gly Ser Ala Gly Glu Gln Leu Gly Ile Leu Ala Ile
 20 25 30
 Lys Asp Ala Leu Asp Leu Ala Arg Glu Ala Gly Leu Asp Leu Val Glu
 35 40 45
 Val Ala Ser Asn Ser Glu Pro Val Cys Lys Ile Met Asp Tyr Gly
 50 55 60
 Lys Tyr Arg Tyr Gly Leu Thr Lys Lys Glu Lys Asp Ser Lys Lys Ala
 65 70 75 80
 Gln His Gln Val Arg Ile Lys Glu Val Lys Leu Lys Pro Asn Ile Asp
 85 90 95
 Glu Asn Asp Phe Ser Thr Lys Leu Lys Gln Ala Arg Thr Phe Val Glu
 100 105 110
 Lys Gly Asn Lys Val Lys Ile Thr Cys Met Phe Arg Gly Arg Glu Leu
 115 120 125
 Ala Tyr Pro Glu His Gly Phe Lys Val Val Gln Lys Met Ser Gln Gly
 130 135 140
 Leu Glu Asp Ile Gly Phe Val Glu Ala Glu Pro Lys Leu Ala Gly Arg
 145 150 155 160
 Ser Leu Ile Cys Val Val Ala Pro Gly Thr Val Lys Thr Lys Lys Lys
 165 170 175
 Gln Glu Lys Ser His Ala Gln Asp Glu Asn Gln
 180 185

<210>1066

<211>121

<212>PRT

<213>Chlamydia pneumoniae

<400>1066

Met Val Arg Ala Thr Gly Ser Val Ala Ser Arg Arg Arg Arg Lys Arg
 1 5 10 15
 Ile Leu Lys Gln Ala Lys Gly Phe Trp Gly Asp Arg Lys Gly His Ile
 20 25 30
 Arg Gln Ser Arg Ser Ser Val Met Arg Ala Met Ala Phe Asn Tyr Met
 35 40 45
 His Arg Lys Asp Arg Lys Gly Asp Phe Arg Ser Leu Trp Ile Ala Arg
 50 55 60
 Leu Asn Val Ala Ser Arg Ile His Ser Leu Ser Tyr Ser Arg Leu Ile
 65 70 75 80
 Asn Gly Leu Lys Cys Ala Asn Ile Ser Leu Asn Arg Lys Met Leu Ser
 85 90 95

Glu Ile Ala Ile His Asn Pro Glu Gly Phe Ala Glu Ile Ala Asn Gln
 100 105 110
 Ala Lys Lys Ala Leu Glu Ala Thr Val
 115 120
 <210>1067
 <211>339
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1067
 Met Glu Met Lys Glu Glu Ile Glu Ala Val Lys Gln Gln Phe His Ser
 1 5 10 15
 Glu Leu Asp Gln Val Asn Ser Ser Gln Ala Leu Ala Asp Leu Lys Val
 20 25 30
 Arg Tyr Leu Gly Lys Lys Gly Ile Phe Arg Ser Phe Ser Glu Lys Leu
 35 40 45
 Lys Gln Cys Thr Asp Lys Ala Lys Leu Gly Ser Leu Ile Asn Asp Phe
 50 55 60
 Lys Thr Tyr Val Glu Asp Leu Leu Gln Glu Lys Ser Leu Val Leu Leu
 65 70 75 80
 Ala Ser Glu Gln Ala Glu Ala Phe Ser Lys Glu Lys Ile Asp Ser Ser
 85 90 95
 Leu Pro Gly Asp Ser Gln Pro Ser Gly Gly Arg His Ile Leu Lys Ser
 100 105 110
 Ile Leu Asp Asp Val Val Asp Ile Phe Val His Leu Gly Phe Cys Val
 115 120 125
 Arg Glu Ala Pro Asn Ile Glu Ser Glu Ala Asn Asn Phe Thr Leu Leu
 130 135 140
 Asn Phe Thr Glu Asp His Pro Ala Arg Gln Met His Asp Thr Phe Tyr
 145 150 155 160
 Leu Asn Ala Thr Thr Val Leu Arg Thr His Thr Ser Asn Val Gln Ala
 165 170 175
 Arg Glu Leu Lys Lys Gln Gln Pro Pro Ile Lys Val Val Ala Pro Gly
 180 185 190
 Leu Cys Phe Arg Asn Glu Asp Ile Ser Ala Arg Ser His Val Leu Phe
 195 200 205
 His Gln Val Glu Ala Phe Tyr Val Asp His Asn Val Thr Phe Ser Asp
 210 215 220
 Leu Thr Ala Ile Leu Ser Ala Phe Tyr His Ser Phe Phe Gln Arg Lys
 225 230 235 240
 Thr Glu Leu Arg Phe Arg His Ser Tyr Phe Pro Phe Val Glu Pro Gly
 245 250 255
 Ile Glu Val Asp Val Ser Cys Glu Cys Cys Gly Lys Gly Cys Ala Leu
 260 265 270
 Cys Lys His Thr Gly Trp Leu Glu Val Ala Gly Ala Gly Met Ile His
 275 280 285
 Pro Gln Val Leu Arg Asn Gly Asn Val Asp Pro Glu Ile Tyr Ser Gly
 290 295 300
 Tyr Ala Val Gly Met Gly Ile Glu Arg Leu Ala Met Leu Lys Tyr Gly
 305 310 315 320
 Val Ser Asp Ile Arg Leu Phe Ser Glu Asn Asp Leu Arg Phe Leu Gln
 325 330 335
 Gln Phe Ser

<210>1068
 <211>690
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1068
 Leu Phe Trp Phe His Arg Gly Gly Arg Met Lys Arg Ser Arg Arg Asn
 1 5 10 15
 Phe Glu Gln Ala Leu Glu Asn Leu Glu Lys Leu Lys Glu Ile Ser Leu
 20 25 30
 Ala Thr Ser Asn Asp Ser Tyr Leu Asn Asn Pro Ala Arg Phe Asn Gln
 35 40 45

Arg	Lys	Gln	Thr	Gly	Ser	Ser	Val	Met	Glu	Met	Lys	Glu	Ala	Leu	Lys
50						55					60				
Asn	Val	Glu	Asn	Tyr	Leu	Leu	Glu	Ile	Ser	Cys	Val	Ser	Lys	Ser	His
65					70					75					80
Ala	Asp	Lys	Ala	Leu	Lys	Glu	Ser	Asp	Phe	Leu	Ile	Ala	Gly	Val	Gln
				85					90					95	
Asn	Val	Phe	Ser	Phe	Leu	Glu	Asn	Gln	Glu	Asp	Leu	Tyr	Lys	Ser	Leu
			100					105					110		
Leu	Asp	Glu	Tyr	Ser	Glu	Val	Thr	Lys	Ala	Tyr	Asp	Glu	Val	Lys	Lys
		115					120					125			
Asn	Leu	Lys	Glu	Val	Pro	Thr	Tyr	Asp	Leu	Ser	Thr	Asp	Glu	Glu	Thr
130						135					140				
Glu	Glu	His	Lys	Glu	Pro	Glu	Cys	Phe	Leu	Asn	Asn	Leu	Val	Glu	Val
145					150					155					160
Lys	Arg	Asp	Arg	Ser	Tyr	Glu	Leu	Phe	Tyr	Met	Leu	Asp	Glu	Gln	Asp
				165					170					175	
Lys	Arg	Phe	Tyr	Asn	Asp	Ala	Leu	Val	Gln	Ile	Ile	Tyr	Lys	Gln	Asn
			180					185					190		
Lys	Leu	His	Glu	Thr	Val	Asn	Glu	Gly	Asp	Pro	Leu	Thr	Lys	Thr	Leu
		195				200						205			
Leu	Trp	Asn	Ser	Glu	Glu	Val	Lys	Asn	Ile	Ala	Ser	Ser	Leu	Val	Ile
210						215					220				
Val	Asn	Asp	Met	Pro	Leu	Arg	Leu	Phe	Tyr	Gln	Arg	Ala	Leu	Ser	His
225					230					235					240
Leu	Asp	Ile	Glu	Ala	Val	Val	Lys	Val	His	Asn	Ala	Val	Met	Ala	Leu
				245					250					255	
Phe	Phe	Ser	Arg	Tyr	Glu	Ala	Thr	Met	Val	Phe	Lys	Ser	Pro	Lys	Lys
			260					265					270		
His	Asn	Ile	Trp	Tyr	Phe	Asn	Asp	Phe	Leu	Leu	Phe	Leu	Arg	Glu	Ala
		275				280						285			
Trp	Lys	Asp	Leu	Asn	Asn	Asn	Val	Ile	Asp	Ser	Gln	Glu	Arg	Lys	Gln
290					295						300				
Thr	Lys	Leu	Leu	Ala	Ser	Ala	Leu	Ser	Leu	Gly	Ile	Phe	Glu	Ser	Lys
305					310					315					320
Leu	Val	Phe	Glu	Glu	Ala	Ser	Arg	Tyr	Leu	Tyr	Phe	Asn	Ile	Gln	Thr
				325					330					335	
Lys	Leu	Glu	Asn	Ala	Asn	Gly	Lys	Lys	Pro	Leu	Ser	Pro	Gly	Gln	Tyr
			340					345					350		
Leu	Thr	Asp	Ala	Tyr	Glu	Glu	Leu	His	Arg	Leu	Ile	Ser	Lys	Tyr	Pro
		355				360						365			
Asn	Gly	Pro	Leu	Phe	Lys	Ala	Met	Asp	Arg	Val	Leu	Glu	His	Glu	Ser
370						375					380				
Arg	Pro	Tyr	Asp	Pro	Met	Ile	Leu	Gly	Ile	Leu	Pro	Ser	Leu	Glu	Gly
385					390					395					400
Thr	Leu	Lys	Leu	His	Gly	Lys	Ser	Ile	Asp	Ile	Ile	Arg	Ser	Pro	Ser
				405					410					415	
Pro	Val	Thr	Gln	Ser	Ser	Ile	Leu	Tyr	Ala	Asn	Cys	Asn	Glu	Glu	Phe
			420					425					430		
Leu	Gly	Phe	Leu	Asn	Ala	Lys	Ala	His	Arg	Ser	Glu	Val	Thr	Leu	Val
			435				440					445			
Leu	Asn	Ile	Gln	Asn	Arg	Ile	Ser	Arg	Lys	Glu	Arg	Ala	Arg	Ser	Arg
450						455					460				
Val	Ile	Glu	Glu	Ala	Leu	Glu	Gln	Glu	Glu	His	Ala	Pro	Tyr	Val	His
465					470					475					480
Ala	Phe	Ser	Phe	Pro	Glu	Pro	Glu	Glu	Leu	Leu	Gln	Asn	Leu	Glu	Ser
				485					490					495	
Ile	His	Gly	Asp	Ile	Glu	Thr	Phe	Ala	Asp	Phe	Phe	Ser	Ile	Leu	Gln
			500					505					510		
Glu	Glu	Phe	His	Lys	Pro	Leu	Leu	Ala	Ser	Ser	Phe	Phe	Leu	Thr	Lys
		515						520				525			
Glu	Leu	Lys	Glu	Phe	Val	Gly	Ser	Phe	Leu	Lys	Glu	Lys	Leu	Thr	Ala
530						535					540				
Leu	Lys	Asp	Ile	Phe	Phe	Ala	Lys	Lys	Lys	Ile	Leu	Phe	Arg	Asn	Asp
545					550					555				560	

Lys Leu Leu Leu Leu His Leu Leu Ser Tyr Leu Ile Val Phe Lys Leu
 565 570 575
 Ile Glu Arg Thr Asn Pro Asn Ser Ile Val Val Val Ser Lys Asp Gly
 580 585 590
 Leu Asp Tyr Val Ser Val Phe Ile Ala Gly Phe Ala Phe Phe Ser Arg
 595 600 605
 Glu Ala Phe Trp Asp Glu His Ser Leu Lys Leu Leu Leu Thr Asn Val
 610 615 620
 Leu Ser Pro Thr Leu Val Ala Arg Asp Arg Leu Val Phe Val Ser His
 625 630 635 640
 Ile Glu Leu Leu Ser Lys Phe Val Asn Cys Leu Lys Lys Asn Arg Gln
 645 650 655
 Gly Phe Ser Ser Leu Lys Ser Phe Phe Lys Asp Asp Ile Glu Gly Trp
 660 665 670
 Glu Phe Thr Gly Tyr Leu His Glu Leu Thr Glu Val Ser His Lys His
 675 680 685
 Asn Leu
 690
 <210>1069
 <211>367
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1069
 Arg Met Leu Ile Trp Lys Arg His Leu Leu Thr Arg Phe Trp Phe Ala
 1 5 10 15
 Leu Thr Ser Leu Leu Val Leu Ala Leu Ile Phe Tyr Ala Ser Ile His
 20 25 30
 His Ser Leu His Thr Leu Lys Gly Ala Ser Thr Ala Ala Ser Gly Ala
 35 40 45
 Ser Val Lys Leu Ser Ile Leu Tyr Tyr Leu Ala Gln Ile Ser Leu Lys
 50 55 60
 Ala Glu Phe Leu Met Pro Gln Leu Val Ala Val Ala Thr Thr Ser Thr
 65 70 75 80
 Leu Phe Ala Met Gln Asn Lys Arg Glu Ile Ile Leu Leu Gln Ala Ser
 85 90 95
 Gly Leu Ser Leu Lys Ser Leu Met His Pro Leu Leu Leu Ser Gly Ala
 100 105 110
 Val Ile Met Met Val Leu Tyr Ala Asn Phe Gln Trp Leu His Pro Ile
 115 120 125
 Cys Glu Lys Ile Ser Ile Thr Lys Glu Asn Met Asp Arg Gly Thr Thr
 130 135 140
 Asp Lys Glu Gln Gly Lys Ile Pro Ala Leu Tyr Leu Lys Asp Gln Thr
 145 150 155 160
 Val Leu Leu Tyr Ser Ser Ile Glu Pro Lys Thr Leu Thr Leu Asn Asn
 165 170 175
 Val Phe Trp Ile Lys Asp Pro Lys Thr Ile Tyr Thr Met Glu Lys Leu
 180 185 190
 Ala Phe Thr Thr Leu Ser Leu Pro Ile Gly Leu Asn Val Thr Gln Phe
 195 200 205
 Phe Ala Asn Asp Ser Glu Asn Leu Glu Leu Lys Glu Phe Phe Asp Met
 210 215 220
 Lys Glu Phe Pro Glu Ile Glu Phe Asn Phe Tyr Glu Asn Pro Phe Ser
 225 230 235 240
 Lys Leu Phe Ser Ala Gly Asn Lys Asn Arg Leu Ser Glu Phe Phe Lys
 245 250 255
 Ala Ile Pro Trp Asn Ala Thr Gly Leu Gly Leu Ser Thr Gln Val Pro
 260 265 270
 Gln Arg Ile Leu Ser Leu Leu Ala Gln Phe Tyr Tyr Val Leu Ile Ser
 275 280 285
 Pro Leu Ala Cys Met Ala Ala Ile Ile Leu Ser Ala Tyr Leu Cys Leu
 290 295 300
 Arg Phe Ser Arg Thr Pro Thr Val Thr Leu Ala Tyr Leu Ile Pro Leu
 305 310 315 320
 Gly Thr Val Asn Ile Phe Phe Val Phe Leu Lys Ala Gly Ile Val Leu

325 330 335
 Ala Ser Ser Ser Val Leu Pro Thr Leu Pro Val Met Ala Phe Pro Leu
 340 345 350
 Ile Val Leu Phe Leu Leu Thr Asn Tyr Ala Tyr Ala Lys Leu Gln
 355 360 365

<210>1070

<211>358

<212>PRT

<213>Chlamydia pneumoniae

<400>1070

Ala Met Pro Ile Leu Trp Lys Val Leu Ile Phe Arg Tyr Leu Lys Thr
 1 5 10 15
 Ala Ala Phe Cys Thr Leu Ser Leu Ile Cys Ile Ser Ile Ile Ser Ser
 20 25 30
 Leu Gln Glu Ile Val Ala Tyr Ile Ala Lys Asp Val Pro Tyr Asp Thr
 35 40 45
 Val Leu Arg Leu Met Ala Tyr Gln Ile Pro Tyr Leu Leu Pro Phe Ile
 50 55 60
 Leu Pro Gly Ser Cys Phe Val Ser Ala Phe Ser Leu Phe Arg Lys Leu
 65 70 75 80
 Ser Asp Asn Asn His Met Thr Phe Leu Arg Ala Ser Gly Ala Ser Gln
 85 90 95
 Ser Ile Ile Met Phe Pro Val Leu Met Val Ser Gly Ala Ile Cys Cys
 100 105 110
 Leu Asn Phe Tyr Thr Cys Ser Glu Leu Ala Ser Ile Cys Arg Tyr Gln
 115 120 125
 Thr Cys Lys Glu Ile Ala Asn Met Ala Met Thr Ser Pro Ala Leu Leu
 130 135 140
 Leu Gln Thr Leu Gln Lys Lys Glu Asn Asn Arg Ile Phe Ile Ala Val
 145 150 155 160
 Asp His Cys Ala Lys Ser Lys Phe Asp Asn Val Ile Val Ala Leu Lys
 165 170 175
 Gly Asn Asn Glu Ile Ser His Val Gly Ile Ile Lys Ser Ile Ile Pro
 180 185 190
 Asp Thr Thr Lys Asp Thr Val Lys Ala Lys Asp Val Val Phe Ile Ser
 195 200 205
 Lys Leu Pro Asp Ser Leu Thr Glu Ser Ser Ser Pro Ser Ser Gln Arg
 210 215 220
 Phe Tyr Ile Glu Thr Leu Asp Glu Leu Leu Ile Pro Lys Ile Thr Ser
 225 230 235 240
 Thr Leu Phe Ala Gly Lys Ser Tyr Leu Lys Thr Arg Thr Asp Tyr Leu
 245 250 255
 Pro Trp Lys Gln Leu Val Lys Gln Ser Leu Lys His Ser His Leu Pro
 260 265 270
 Glu Thr Leu Arg Arg Val Ala Ile Gly Phe Leu Cys Ile Thr Leu Thr
 275 280 285
 Tyr Ala Gly Met Ile Leu Gly Ile His Lys Pro Arg Phe Arg Lys Ser
 290 295 300
 Ile Ala Leu Tyr Phe Ile Phe Pro Ile Leu Asp Leu Ile Leu Leu Ile
 305 310 315 320
 Val Gly Lys Asn Thr Lys Asn Leu Pro Leu Ala Phe Met Leu Phe Val
 325 330 335
 Phe Pro Gln Leu Val Ser Trp Val Val Phe Ala Ala Arg Ala Tyr Arg
 340 345 350
 Glu Ser Arg Gly Tyr Ala
 355

<210>1071

<211>319

<212>PRT

<213>Chlamydia pneumoniae

<400>1071

Met Val Leu Ser Ser Asp Leu Leu Arg Asp Asp Lys Gln Leu Asp Leu
 1 5 10 15
 Phe Phe Ala Ser Leu Asp Val Lys Lys Arg Tyr Leu Leu Ala Leu Ser

20 25 30
 Gly Gly Ser Asp Ser Leu Phe Leu Phe Tyr Leu Leu Lys Glu Arg Gly
 35 40 45
 Val Ser Phe Thr Ala Val His Ile Asp His Gly Trp Arg Ser Thr Ser
 50 55 60
 Ala Gln Glu Ala Lys Glu Leu Glu Glu Leu Cys Ala Arg Glu Gly Val
 65 70 75 80
 Pro Phe Val Leu Tyr Thr Leu Thr Ala Glu Glu Gln Gly Asp Lys Asp
 85 90 95
 Leu Glu Asn Gln Ala Arg Lys Lys Arg Tyr Ala Phe Leu Tyr Glu Ser
 100 105 110
 Tyr Arg Gln Leu Asp Ala Gly Gly Ile Phe Leu Ala His His Ala Asn
 115 120 125
 Asp Gln Ala Glu Thr Val Leu Lys Arg Leu Leu Glu Ser Ala His Leu
 130 135 140
 Thr Asn Leu Lys Ala Met Ala Glu Arg Ser Tyr Val Glu Asp Val Leu
 145 150 155 160
 Leu Leu Arg Pro Leu Leu His Ile Pro Lys Ser Ser Leu Lys Glu Ala
 165 170 175
 Leu Asp Ala Arg Gly Ile Ser Tyr Leu Gln Asp Pro Ser Asn Glu Asp
 180 185 190
 Glu Arg Tyr Leu Arg Ala Arg Met Arg Lys Lys Leu Phe Pro Trp Leu
 195 200 205
 Glu Glu Val Phe Gly Lys Asn Ile Thr Phe Pro Leu Leu Thr Leu Gly
 210 215 220
 Glu Glu Ser Ala Glu Leu Ser Glu Tyr Leu Glu Lys Gln Ala Gln Pro
 225 230 235 240
 Phe Phe Ser Ala Ala Thr His Gln Asp Ser Gln Gly Glu Leu Pro Cys
 245 250 255
 Pro Asp Cys Leu Ile Gln Gln Ala Phe Leu Cys Lys Trp Val Met Lys
 260 265 270
 Lys Phe Phe Asn Asn Ala Gly Ile Ala Val Ser Arg His Phe Leu Gln
 275 280 285
 Met Val Tyr Asp His Leu Ser Arg Ser Ser Cys Ala Thr Leu Arg Met
 290 295 300
 Arg Asn Lys Ile Val Ile Ile Lys Pro Gly Val Val Val Ile Asp
 305 310 315

<210>1072

<211>918

<212>PRT

<213>Chlamydia pneumoniae

<400>1072

Leu Ile Ser Leu Val Val Lys Phe Met Ser Lys Asp Lys Lys Met Lys
 1 5 10 15
 Pro Glu Pro Lys Lys Asn Phe Pro Thr Val Phe Phe Phe Leu Leu Phe
 20 25 30
 Gly Val Val Phe Gly Val Val Ala Phe Gln Asn Phe Leu Ala Gly Lys
 35 40 45
 Lys Ala Arg Val Gly Phe Ser His Gln Ile Glu His Leu Val Asn Leu
 50 55 60
 Arg Leu Ile Val Pro Glu Asp Ser His Lys Ile Ala Leu Asn Asp Asn
 65 70 75 80
 Leu Val Ser Phe Gly Gly Arg Phe Arg Asp Val Gln Thr Gln Glu Gly
 85 90 95
 Gln Leu Arg Tyr His Tyr Leu Glu Leu Ile Asp Gln Gly His Arg Leu
 100 105 110
 Asp Leu Asp Leu Gln Glu Thr Ser Lys Ser Leu Thr Thr Leu Gly Lys
 115 120 125
 Glu Val Thr Asn Ser Ile Leu Trp Phe Ser Ala Ile Ser Gly Ser Pro
 130 135 140
 Ile Pro Glu Gln Gly Tyr Ala Ile Ser Tyr Pro Ser Glu Val Ser Gly
 145 150 155 160
 Ser Val Leu Thr Glu Pro Leu Val Val Thr Gly Pro Ala Thr Pro Gln
 165 170 175

Leu	Ile	Asn	Leu	His	Ser	Leu	Gln	Glu	Arg	Tyr	Pro	Thr	Leu	Ser	Arg
		180						185					190		
Ser	Pro	Glu	Ala	Leu	Arg	Thr	Tyr	Gly	Ser	Asp	Leu	Tyr	Glu	Leu	Ile
		195					200					205			
Gly	Lys	Tyr	Leu	Ser	Pro	Val	Leu	Gly	Ile	Gly	Ser	Glu	Thr	Leu	Lys
	210					215					220				
Arg	Glu	Leu	Lys	Asp	Leu	Tyr	Gln	Gln	Val	Glu	Val	Ser	Leu	Thr	Gln
	225				230					235					240
Glu	Thr	Asp	Thr	Glu	Ala	Ala	Tyr	Thr	Leu	Tyr	Gly	Gln	Val	Leu	Ser
			245						250					255	
Thr	Leu	Asn	Arg	Ile	Ser	Ser	Ser	Leu	Val	Val	Ser	Glu	Gly	Gly	Glu
		260						265					270		
Arg	Phe	Ser	Gln	Leu	Arg	Ser	Val	Arg	Leu	Tyr	Arg	Glu	Glu	Trp	Asn
	275					280						285			
Lys	Tyr	His	Lys	Leu	Val	Glu	Ala	Arg	Asp	Leu	Asn	Gln	Ala	Gln	Leu
	290					295					300				
Glu	Lys	Leu	Arg	Gly	Glu	Leu	Ser	Gln	Thr	Val	Trp	Tyr	Phe	Asn	Asn
	305				310					315					320
Gln	Glu	Leu	Ser	Ser	Arg	Ser	Leu	Glu	Lys	Gln	Asp	Pro	Glu	Val	Phe
			325					330					335		
Gly	His	Trp	Phe	Ala	Gly	Ala	Lys	Glu	Glu	Trp	Thr	Ala	Phe	Lys	Phe
		340						345					350		
Asn	His	Ser	Leu	Ser	Phe	Lys	Ala	Pro	Asp	Gln	Pro	Arg	Asn	Leu	Val
	355					360						365			
Leu	Glu	Lys	Thr	Phe	Lys	Ser	Gln	Glu	Pro	Ser	Pro	His	Xaa	Leu	Gly
	370					375					380				
Tyr	Leu	Phe	Thr	Xaa	Leu	Pro	Ile	Ile	Leu	Val	Leu	Leu	Phe	Val	Tyr
	385				390					395					400
Leu	Val	Phe	Ser	Arg	Gln	Met	Arg	Gly	Met	Ser	Gly	Ser	Ala	Met	Ser
			405					410					415		
Phe	Gly	Lys	Ser	Pro	Ala	Arg	Met	Leu	Leu	Lys	Gly	Gln	Asn	Lys	Val
		420						425					430		
Thr	Phe	Ala	Asp	Val	Ala	Gly	Ile	Glu	Glu	Ala	Lys	Glu	Glu	Leu	Ile
	435					440						445			
Glu	Ile	Val	Asp	Phe	Leu	Lys	Asn	Pro	Asn	Lys	Phe	Thr	Ser	Leu	Gly
	450					455					460				
Gly	Arg	Ile	Pro	Lys	Gly	Val	Leu	Leu	Ile	Gly	Pro	Pro	Gly	Thr	Gly
	465				470					475					480
Lys	Thr	Leu	Ile	Ala	Lys	Ala	Val	Ser	Gly	Glu	Ala	Asp	Arg	Pro	Phe
			485					490					495		
Phe	Ser	Ile	Ala	Gly	Ser	Asp	Phe	Val	Glu	Met	Phe	Val	Gly	Val	Gly
		500						505					510		
Ala	Ser	Arg	Ile	Arg	Asp	Met	Phe	Glu	Gln	Ala	Lys	Arg	Asn	Ala	Pro
	515					520						525			
Cys	Ile	Ile	Phe	Ile	Asp	Glu	Ile	Asp	Ala	Val	Gly	Arg	His	Arg	Gly
	530					535					540				
Ala	Gly	Ile	Gly	Gly	Gly	His	Asp	Glu	Arg	Glu	Gln	Thr	Leu	Asn	Gln
	545				550					555					560
Leu	Leu	Val	Glu	Met	Asp	Gly	Phe	Gly	Thr	Asn	Glu	Gly	Val	Ile	Leu
			565					570					575		
Met	Ala	Ala	Thr	Asn	Arg	Pro	Asp	Val	Leu	Asp	Lys	Ala	Leu	Leu	Arg
	580							585					590		
Pro	Gly	Arg	Phe	Asp	Arg	Arg	Val	Val	Met	Asn	Leu	Pro	Asp	Ile	Lys
	595					600						605			
Gly	Arg	Phe	Glu	Ile	Leu	Met	Val	His	Ala	Lys	Arg	Ile	Lys	Leu	Asp
	610					615					620				
Pro	Thr	Val	Asp	Leu	Met	Ala	Val	Ala	Arg	Ser	Thr	Pro	Gly	Ala	Ser
	625				630					635					640
Gly	Ala	Asp	Leu	Glu	Asn	Leu	Leu	Asn	Glu	Ala	Ala	Leu	Leu	Ala	Ala
			645					650						655	
Arg	Lys	Asp	Arg	Thr	Ala	Val	Thr	Ala	Val	Asp	Val	Ala	Glu	Ala	Arg
		660						665					670		
Asp	Lys	Val	Leu	Tyr	Gly	Lys	Glu	Arg	Arg	Ser	Leu	Glu	Met	Asp	Ala
	675						680					685			

Glu Glu Arg Lys Thr Thr Ala Tyr His Glu Ser Gly His Ala Val Val
 690 695 700
 Gly Leu Cys Val Gln His Gly Asp Pro Val Asp Lys Val Thr Ile Ile
 705 710 715 720
 Pro Arg Gly Leu Ser Leu Gly Ala Thr His Phe Leu Pro Glu Lys Asn
 725 730 735
 Lys Leu Ser Tyr Trp Lys Lys Glu Leu Tyr Asp Gln Leu Ala Val Leu
 740 745 750
 Met Gly Gly Arg Ala Ala Glu Glu Ile Phe Leu Gly Asp Ile Ser Ser
 755 760 765
 Gly Ala Gln Gln Asp Ile Ser Gln Ala Thr Lys Leu Val Arg Ser Met
 770 775 780
 Val Cys Glu Trp Gly Met Ser Pro Gln Leu Gly Asn Val Thr Tyr Asp
 785 790 795 800
 Glu Arg Ser Asp Gly Leu Thr Gly Tyr Gly Tyr His Glu Lys Ser
 805 810 815
 Tyr Ser Glu Glu Thr Ala Lys Thr Ile Asp Thr Glu Leu Arg Met Leu
 820 825 830
 Leu Asp Ala Ala Tyr Gln Arg Ala Leu Asp Ile Ile Asn Glu His Lys
 835 840 845
 Ala Glu Ile Glu Leu Met Thr Gln Met Leu Ile Glu Phe Glu Thr Leu
 850 855 860
 Asp Ser Lys Asp Val Lys Glu Ile Met Asp His Thr Trp Asp Pro Glu
 865 870 875 880
 Lys Lys Arg Ala Arg Leu Lys Glu Glu Gly Met Leu Phe Lys Lys Ser
 885 890 895
 Ser Asp Asp Leu Pro Pro Pro Pro Pro Lys Glu Asp Thr Leu Pro Gly
 900 905 910
 Leu Gly Phe Asn Ala Thr
 915

<210>1073

<211>568

<212>PRT

<213>Chlamydia pneumoniae

<400>1073

Ser Ser Cys Tyr Leu Arg Xaa Ser Ala Ala Leu Ala Ile Ser Asp Ile
 1 5 10 15
 Pro Gln Ser Asn Ile Val Ala Gly Val Arg Ile Gly Cys Ile Asp Asn
 20 25 30
 Gln Trp Val Ile Asn Pro Thr Lys Thr Glu Leu Ala Ser Ser Thr Leu
 35 40 45
 Asp Leu Val Leu Ala Gly Thr Glu Asn Ala Ile Leu Met Ile Glu Gly
 50 55 60
 His Cys Asp Phe Phe Thr Glu Glu Gln Val Leu Asp Ala Ile Glu Phe
 65 70 75 80
 Gly His Lys His Ile Val Thr Ile Cys Lys Arg Leu Gln Leu Trp Gln
 85 90 95
 Glu Glu Val Gly Lys Ser Lys Asn Leu Ser Ala Val Tyr Pro Leu Pro
 100 105 110
 Ala Glu Val Leu Thr Ala Val Lys Glu Cys Ala Gln Asp Lys Phe Thr
 115 120 125
 Glu Leu Phe Asn Ile Lys Asp Lys Lys Val His Ala Ala Thr Ala His
 130 135 140
 Glu Ile Glu Glu Asn Ile Leu Glu Lys Leu Gln Arg Glu Asp Asp Asp
 145 150 155 160
 Leu Phe Ser Ser Phe Asn Ile Lys Ala Ala Cys Lys Thr Leu Lys Ser
 165 170 175
 Asp Thr Met Arg Ala Leu Ile Arg Asp Arg Glu Ile Arg Ala Asp Gly
 180 185 190
 Arg Ser Leu Thr Thr Val Arg Pro Ile Thr Ile Glu Thr Ser Tyr Leu
 195 200 205
 Pro Arg Thr His Gly Ser Cys Leu Phe Thr Arg Gly Glu Thr Gln Thr
 210 215 220
 Leu Ala Val Cys Thr Leu Gly Ser Glu Ala Met Ala Gln Arg Tyr Glu

WO 99/27105

PCT/IB98/01890

225 230 235 240
 Asp Leu Asn Gly Glu Gly Leu Ser Lys Phe Tyr Leu Gln Tyr Phe Phe
 245 250 255
 Pro Pro Phe Ser Val Gly Glu Val Gly Arg Ile Gly Ser Pro Gly Arg
 260 265 270
 Arg Glu Ile Gly His Gly Lys Leu Ala Glu Lys Ala Leu Ser His Ala
 275 280 285
 Leu Pro Asp Ser Ala Thr Phe Pro Tyr Thr Ile Arg Ile Glu Ser Asn
 290 295 300
 Ile Thr Glu Ser Asn Gly Ser Ser Ser Met Ala Ser Val Cys Gly Gly
 305 310 315 320
 Cys Leu Ala Leu Met Asp Ala Gly Val Pro Ile Ser Ser Pro Ile Ala
 325 330 335
 Gly Ile Ala Met Gly Leu Ile Leu Asp Asp Gln Gly Ala Ile Ile Leu
 340 345 350
 Ser Asp Ile Ser Gly Leu Glu Asp His Leu Gly Asp Met Asp Phe Lys
 355 360 365
 Ile Ala Gly Ser Gly Lys Gly Ile Thr Ala Phe Gln Met Asp Ile Lys
 370 375 380
 Val Glu Gly Ile Thr Pro Ala Ile Met Lys Lys Ala Leu Ser Gln Ala
 385 390 395 400
 Lys Gln Gly Cys Asn Asp Ile Leu Asn Ile Met Asn Glu Ala Leu Ser
 405 410 415
 Ala Pro Lys Ala Asp Leu Ser Gln Tyr Ala Pro Arg Ile Glu Thr Met
 420 425 430
 Gln Ile Lys Pro Thr Lys Ile Ala Ser Val Ile Gly Pro Gly Gly Lys
 435 440 445
 Gln Ile Arg Gln Ile Ile Glu Glu Thr Gly Val Gln Ile Asp Val Asn
 450 455 460
 Asp Leu Gly Val Val Ser Ile Ser Ala Ser Ser Ala Ser Ala Ile Asn
 465 470 475 480
 Lys Ala Lys Glu Ile Ile Glu Gly Leu Val Gly Glu Val Glu Val Gly
 485 490 495
 Lys Thr Tyr Arg Gly Arg Val Thr Ser Val Val Ala Phe Gly Ala Phe
 500 505 510
 Val Glu Val Leu Pro Gly Lys Glu Gly Leu Cys His Ile Ser Glu Cys
 515 520 525
 Ser Arg Gln Arg Ile Glu Asn Ile Ser Asp Val Val Lys Glu Gly Asp
 530 535 540
 Ile Ile Asp Val Lys Leu Leu Ser Ile Asn Glu Lys Gly Gln Leu Lys
 545 550 555 560
 Leu Ser His Lys Ala Thr Leu Glu
 565

<210>1074

<211>127

<212>PRT

<213>Chlamydia pneumoniae

<400>1074

Ser Asp Arg Ser Lys Ile Leu Val Phe Glu Thr Gly Lys Ile Ala Arg
 1 5 10 15
 Gln Ala Asn Gly Ala Val Leu Val Arg Ser Gly Glu Thr Cys Val Phe
 20 25 30
 Ala Ser Ala Cys Ala Val Asp Leu Asp Asp Lys Val Asp Phe Leu Pro
 35 40 45
 Leu Arg Val Asp Tyr Gln Glu Lys Phe Ser Ser Thr Gly Lys Thr Leu
 50 55 60
 Gly Gly Phe Ile Lys Arg Glu Gly Arg Pro Ser Glu Lys Glu Ile Leu
 65 70 75 80
 Val Ser Arg Leu Ile Asp Arg Ser Leu Arg Pro Ser Phe Pro Tyr Arg
 85 90 95
 Leu Met Gln Asp Val Gln Val Leu Ser Tyr Val Trp Ser Tyr Asp Gly
 100 105 110
 Gln Val Leu Pro Asp Pro Leu Ala Ile Cys Ala Xaa Leu Leu
 115 120 125

<210>1075
 <211>163
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1075
 Leu Gly Gly Glu Lys Leu Ile Asn Met Glu Lys Asp Ile Phe Phe Met
 1 5 10 15
 Gln Gln Ala Phe Lys Glu Ala Arg Lys Ala Tyr Asp Gln Asp Glu Val
 20 25 30
 Pro Val Gly Cys Val Ile Val Lys Asp Asp Lys Ile Ile Ala Arg Ala
 35 40 45
 His Asn Ser Val Glu Lys Leu Lys Asp Ala Thr Ala His Ala Glu Ile
 50 55 60
 Leu Cys Ile Gly Ser Ala Ala Gln Asp Leu Asp Asn Trp Arg Leu Leu
 65 70 75 80
 Asp Thr Val Leu Tyr Cys Thr Leu Glu Pro Cys Leu Met Cys Ala Gly
 85 90 95
 Ala Ile Gln Leu Ala Arg Ile Pro Arg Ile Val Trp Ala Ala Pro Asp
 100 105 110
 Val Arg Leu Gly Ala Gly Gly Ser Trp Val Asn Ile Phe Thr Glu Glu
 115 120 125
 His Pro Phe His Thr Val Ser Cys Thr Gly Gly Val Cys Ser Glu Glu
 130 135 140
 Ala Glu His Leu Met Lys Lys Phe Phe Val Glu Lys Arg Arg Glu Lys
 145 150 155 160
 Ser Glu Lys

<210>1076
 <211>100
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1076
 Lys Ser Ala Glu Arg Lys Val Lys Asn Lys Ile Val Thr Leu Leu Asp
 1 5 10 15
 Gln Leu Tyr Glu Asp Gln Glu Ser Arg Leu Gln Lys Leu Gly Glu Glu
 20 25 30
 Ile Val Pro Asn Leu Thr Pro Glu Asp Leu Leu Gln Pro Met Asp Phe
 35 40 45
 Xaa Gln Leu Glu Gly Asn Pro Ala Phe Arg Phe Glu Glu Gly Val Leu
 50 55 60
 Ser Gly Ile Gly Glu Val Arg Ala Ala Ile Phe Asn Gly Ala Leu Ser
 65 70 75 80
 Arg Glu Leu Glu Ser Gln Arg Ser Ser Ile Gly Val Gly Asp Leu Phe
 85 90 95
 Phe Phe Thr Lys
 100

<210>1077
 <211>180
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1077
 His Leu Ser Ile Glu Glu Leu Met Ser Ile Gln Pro Val Ser Asn Thr
 1 5 10 15
 Thr Thr Lys Ala Asp Lys Val Ile Pro Asp Ser Thr Lys Val Ile Ser
 20 25 30
 Asp Ser Ile Thr Ile Asn Lys Gln Ser Ala Phe Tyr Phe Cys Ile Ser
 35 40 45
 Val Met Leu Arg Leu Ser Glu Ser Thr Thr Glu Tyr Gly Lys Ser Ile
 50 55 60
 Leu Ala Val Leu Glu Asp Asn Thr Ile Val Gln Gln Gln Arg Val Lys
 65 70 75 80
 Glu Leu Ile Asn Leu Pro Leu Leu Lys Val Pro Asp Leu Gln Lys Lys
 85 90 95
 Asp Gly Ser Asp Asp Glu Tyr Lys Asn Gln Asn Glu Ile Gln Ala Tyr

WO 99/27105

PCT/IB98/01890

100 105 110
 Gln Ser Ser Asn Gln Gln Ile Ser Ala Asn Arg Gln Met Ile Gln Gln
 115 120 125
 Glu Leu Ser Ser Ala Gln Gln Arg Ala Gln Ala Asn Gln Lys Ser Val
 130 135 140
 Asn Ser Thr Thr Ile Glu Ser Met Gln Ile Leu Gln Ala Thr Ser Ser
 145 150 155 160
 Met Leu Ser Thr Leu Lys Glu Leu Thr Ile Lys Ala Asn Leu Thr Asn
 165 170 175
 Ser Pro Ser Asp
 180

<210>1078

<211>181

<212>PRT

<213>Chlamydia pneumoniae

<400>1078

Asn Arg Lys Pro Val Arg Leu Asn Met Trp Ile Ile Asp Pro Leu Ser
 1 5 10 15
 Ala Lys Xaa Pro Leu Gln Ala Ala Ile Asn Val Pro Gly Thr Pro Ile
 20 25 30
 Thr Gly Gly Pro Asn Thr Ala Thr Ala Asp Asp Ile Ile Ala Lys Phe
 35 40 45
 Ser Lys Asp Ser Asn Pro Leu Ile Val Thr Val Tyr Tyr Val Tyr Gln
 50 55 60
 Ser Val Leu Val Ala Gln Asp Asn Leu Ser Ile Ile Ala Gln Glu Leu
 65 70 75 80
 Gln Ala Asn Ser Ser Ala Gln Thr Tyr Leu Asn Asn Gln Glu Ala Leu
 85 90 95
 Tyr Gln Tyr Val Ser Ile Pro Lys Asn Lys Leu Asn Asp Asn Ser Ser
 100 105 110
 Ser Tyr Leu Gln Asn Ile Gln Ser Asp Asn Gln Ala Ile Gly Ala Ser
 115 120 125
 Arg Gln Ala Ile Gln Asn Gln Ile Ser Ser Leu Gly Asn Ala Ala Gln
 130 135 140
 Val Ile Ser Ser Asn Leu Asn Thr Asn Asn Asn Ile Ile Gln Gln Ser
 145 150 155 160
 Leu Gln Val Gly Gln Ala Leu Ile Gln Thr Phe Ser Gln Ile Val Ser
 165 170 175
 Leu Ile Ala Asn Ile
 180

<210>1079

<211>168

<212>PRT

<213>Chlamydia pneumoniae

<400>1079

Thr Lys Val Asn Phe Phe Ile Met Ser Ile Thr Thr Leu Gly Thr Leu
 1 5 10 15
 Pro Thr Val Asn Thr Ile Asn Ser Ser Arg Pro Pro Leu Glu Pro Leu
 20 25 30
 Asn Thr Pro Lys Ile Gly Ala Val Leu Phe Ser Ile Tyr Glu Leu Leu
 35 40 45
 Leu Gln Ala Ile Glu Ile Arg Gln Gln Thr Val Leu Thr Gln Ser Gln
 50 55 60
 Gln Leu Asn Asp Asn Thr Asn Ile Gln Gln Gln Leu Asn Gln Glu Thr
 65 70 75 80
 Asn Gln Ile Lys Tyr Ala Ile Val Ser Ala Gly Ala Lys Glu Asp Glu
 85 90 95
 Ile Thr Arg Val Gln Asn Gln Asn Gln Asn Tyr Ser Ala Gln Arg Ser
 100 105 110
 Asn Ile Gln Asp Glu Leu Val Thr Thr Arg Gln Asn Gly Gln Ile Ile
 115 120 125
 Leu Ser His Ala Ser Thr Asn Ile Asn Ile Ile Gln Gln Gln Ser Ser
 130 135 140
 Gln Asp Ser Ser Phe Ile Lys Thr Thr Asn Ser Ile Gly Ser Thr Val

145 150 155 160
 Asn Gln Leu Asn Lys Pro Leu Gly
 165
 <210>1080
 <211>440
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1080
 Val Leu Asn Tyr Ser Phe Ile Gly Met Leu Lys Pro Met Tyr Val Leu
 1 5 10 15
 Ser Lys Arg Leu Tyr Arg Trp Val Asn Gln Leu Ile Lys Leu Gly Asp
 20 25 30
 Leu Val Lys Asn Ser Arg Ser Phe Ser Val Glu Trp Val Phe Ile Ser
 35 40 45
 Ala Leu Leu Leu Ile Phe Gly Cys Leu Gly Cys Ala Ser Val Val Lys
 50 55 60
 Val Ser Leu Val Pro Phe Leu Leu Leu Phe Ser Phe Leu Ala Phe Pro
 65 70 75 80
 Leu Ile Leu Cys Phe Arg Gly Lys Gly Tyr Ala Leu Leu Leu Gly Val
 85 90 95
 Phe Val Thr Leu Tyr Val Ala Lys Tyr Val Val Gly Glu Thr Leu Tyr
 100 105 110
 Val Ser Phe Trp Leu Ser Gly Leu Gly Val Ser Phe Leu Ala Phe
 115 120 125
 Gly Leu Phe Leu Gln Gly Val Trp Leu Ala Gln Glu Glu Met Val
 130 135 140
 Lys Gly Lys Glu Gln Leu Arg Leu Ser Glu Asp Leu Asp Ala Gln Arg
 145 150 155 160
 Ser Ala Tyr Glu Asp Leu Leu Leu Thr Lys Ser Gln Glu Lys Glu Phe
 165 170 175
 Leu Asp Ala Arg Ala Gln Gly Leu Asp Arg Glu Leu Thr Glu Cys Gln
 180 185 190
 Glu Leu Leu Lys Ala Ala Tyr Gln Lys Gln Glu Tyr Leu Thr Ile Asp
 195 200 205
 Leu Lys Ile Leu Ala Asp Gln Lys Asn Ser Trp Leu Glu Asp Tyr Ala
 210 215 220
 Glu Leu His Asn Lys Tyr Ile Glu Leu Val Ser Lys Asn Gly Asp Val
 225 230 235 240
 Val Phe Pro Trp Val Ala Glu Pro Ser Val Gly Glu Ser Gln Gly Ser
 245 250 255
 Glu Arg Val Asp Val Ser Arg Trp Val Ser Ala Leu Gln Glu Lys Glu
 260 265 270
 Glu Ser Leu Glu Arg Leu Arg Asn Glu Ile Leu Val Glu Lys Gln Arg
 275 280 285
 Cys Ser Asp Tyr Glu His Arg Cys Gln Glu Leu Gly Leu Leu Leu Gln
 290 295 300
 Asn Phe Thr Ala Leu Glu Arg Arg Cys Glu Glu Leu Gln Asn Leu Leu
 305 310 315 320
 Asn Gln Lys Glu Thr Gln Ile Asn Glu Leu His Gln Leu Val Cys Lys
 325 330 335
 Ser Glu Glu Lys Val Ser Val Glu Pro Ser Ala His Ala Glu Thr Ser
 340 345 350
 Cys Val Glu Glu Lys Gln Tyr Lys Gly Leu Tyr Ser Gln Leu Gln Glu
 355 360 365
 Gln Phe Leu Glu Lys Ser Glu Thr Leu Ser Leu Val Arg Lys Lys Leu
 370 375 380
 Phe Ala Val Gln Glu Lys Tyr Leu Thr Leu Lys Lys Lys Glu Glu Leu
 385 390 395 400
 Thr Lys Gln Asp Ile Ser Phe Asp Asp Ile Ser Met Ile Gln Gly Leu
 405 410 415
 Leu Glu Arg Ile Glu Ile Leu Glu Glu Val Ser His Leu Glu Glu
 420 425 430
 Leu Val Ser Arg Ser Leu Ser Leu
 435 440

<210>1081
 <211>294
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1081
 Val Ile Leu Met Lys Arg Asn Asp Pro Cys Trp Cys Gly Ser Gly Arg
 1 5 10 15
 Lys Trp Lys Gln Cys His Tyr Pro Gln Pro Pro Lys Met Ser Pro Glu
 20 25 30
 Ala Leu Lys Gln His Tyr Ala Ser Gln Tyr Asn Ile Leu Leu Lys Thr
 35 40 45
 Pro Glu Gln Lys Ala Lys Ile Tyr Asn Ala Cys Gln Ile Thr Ala Arg
 50 55 60
 Ile Leu Asp Glu Leu Cys Lys Ala Ser Gln Lys Gly Val Thr Thr Asn
 65 70 75 80
 Glu Leu Asp Glu Leu Ser Gln Glu Leu His Lys Lys Tyr Asp Ala Ile
 85 90 95
 Ala Ala Pro Phe His Tyr Gly Ser Pro Pro Phe Pro Lys Thr Ile Cys
 100 105 110
 Thr Ser Leu Asn Glu Val Ile Cys His Gly Ile Pro Asn Asp Ile Pro
 115 120 125
 Leu Lys Asp Gly Asp Ile Met Asn Ile Asp Val Ser Cys Ile Val Asp
 130 135 140
 Gly Tyr Tyr Gly Asp Cys Ser Arg Met Val Met Ile Gly Glu Val Pro
 145 150 155 160
 Glu Ile Lys Lys Lys Ile Cys Gln Ala Ala Leu Glu Cys Leu Asn Asp
 165 170 175
 Ser Ile Ala Ile Leu Lys Pro Gly Ile Pro Leu Cys Glu Ile Gly Glu
 180 185 190
 Ala Ile Glu Ala Arg Ala Asp Thr Tyr Gly Phe Ser Val Val Asp Gln
 195 200 205
 Phe Val Gly His Gly Val Gly Ile Glu Phe His Glu Asn Pro Tyr Val
 210 215 220
 Pro His Tyr Arg Asn Arg Ser Met Ile Pro Leu Ala Pro Gly Met Ile
 225 230 235 240
 Phe Thr Ile Glu Pro Met Ile Asn Val Gly Lys Lys Glu Gly Val Val
 245 250 255
 Asp Pro Lys Asn Gln Trp Glu Ala Arg Thr Cys Asp Asn Gln Pro Ser
 260 265 270
 Ala Gln Trp Glu His Thr Ile Ala Ile Thr Glu Thr Gly Tyr Glu Ile
 275 280 285
 Leu Thr Leu Leu Asn Asp
 290
 <210>1082
 <211>202
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1082
 Met Leu Ile Leu Leu Asn Leu Ser Leu Leu Phe Tyr Val Leu Phe Asp
 1 5 10 15
 Ser Pro Gly Ser Ile Pro Val Phe Val Ala Leu Leu Lys Asn Phe Ser
 20 25 30
 Arg Lys Lys Gln Gln Arg Val Ile Leu Arg Glu Cys Leu Phe Ala Leu
 35 40 45
 Gly Ala Leu Ile Leu Phe Val Thr Phe Gly Arg Ser Phe Phe Gln Phe
 50 55 60
 Leu Asp Ile Ser Leu Tyr Ala Phe Gln Ile Ile Gly Gly Phe Leu Leu
 65 70 75 80
 Phe Thr Val Ser Ile Lys Met Met Leu Ala Pro Met Pro Glu Lys Ala
 85 90 95
 Lys Asp Asp Thr Ser Lys Thr Glu Pro Ile Phe Phe Pro Leu Ala Phe
 100 105 110
 Pro Val Ile Thr Gly Pro Ala Val Ile Thr Ala Leu Leu Ser Tyr Met
 115 120 125

Glu Glu Gly Ile Tyr Ser Arg Glu Ile Ile Phe Thr Ala Met Ile Ile
 130 135 140
 Ala Trp Ala Phe Ser Leu Phe Thr Leu Leu Cys Ser Ser Phe Phe Asp
 145 150 155 160
 Arg Leu Ser Gly Asn Phe Gly Leu Leu Ala Leu Glu Arg Leu Phe Gly
 165 170 175
 Ile Ala Leu Leu Leu Met Ser Val Asn Leu Met Leu Lys Gly Ile Ser
 180 185 190
 Ile Ala Phe Asn Ile Gly Phe Tyr Ile Gly
 195 200

<210>1083

<211>251

<212>PRT

<213>Chlamydia pneumoniae

<400>1083

Thr Ser Arg Tyr Gly Pro Leu Pro Cys Ser Arg His His Glu Asp Leu
 1 5 10 15
 His Lys Arg His Ala Asn Thr Asn Arg Glu Ile Asp Arg Gln Phe
 20 25 30
 Pro Ala Arg Phe Leu Tyr Arg Ser Gln Asp Pro Ile Tyr Lys Phe Glu
 35 40 45
 Asp Leu Asn Gly Lys Val Leu Gly Phe Cys Leu Asn Asn Ser Arg Asp
 50 55 60
 Leu Asn Arg Leu Leu Glu Thr Leu Asn Arg Asn Gly Val Val Pro Ser
 65 70 75 80
 Glu Val Lys Asn Val Ser Ser Asp Leu Ile Ser Pro Met Leu Leu Asn
 85 90 95
 Lys Ile Asp Phe Leu Tyr Gly Ala Phe Tyr Asn Ile Glu Gly Val Lys
 100 105 110
 Leu Gln Thr Leu Gly Met Pro Val Lys Cys Phe Leu Ser Asp Thr Cys
 115 120 125
 Asp Leu Pro Thr Gly Pro Gln Leu Ile Val Phe Thr Lys Lys Gly Thr
 130 135 140
 Lys Ala Ser Glu Pro Glu Ile Val Glu Ala Phe Gln Lys Ala Leu Gln
 145 150 155 160
 Glu Ser Ile Ile Phe Ser Lys Asp His Pro Glu Asp Ala Phe Lys Leu
 165 170 175
 Tyr Ala Lys Glu Thr Lys Ser Ile Pro Lys Asn Leu Tyr Gln Glu Tyr
 180 185 190
 Leu Gln Trp Glu Glu Thr Phe Pro Leu Leu Ala Gln Ser Gln Asp Pro
 195 200 205
 Leu Ser Lys Asp Leu Val Asp Lys Leu Leu Glu Thr Ile Ile Lys Arg
 210 215 220
 Tyr Pro Glu Leu Ala Ser Glu Val Ala Lys Phe Ser Leu Asn Asp Leu
 225 230 235 240
 Tyr Asn Pro Ser Leu Pro Glu Glu Gln Ser Val
 245 250

<210>1084

<211>303

<212>PRT

<213>Chlamydia pneumoniae

<400>1084

Arg Ser Pro Thr Thr Ser Phe His Pro Ala Thr Val His Ser Tyr Val
 1 5 10 15
 Cys Ser Gly Ser Thr Asp Cys Thr Leu Val Trp Leu Gly Asn Arg Cys
 20 25 30
 Cys Asn Arg Pro Tyr Ser Thr His His Ile Leu Ser Ala His Pro Asp
 35 40 45
 Tyr Leu Ser Gly His Leu Ile Asn Thr Arg Arg Thr Tyr Arg Ala Ile
 50 55 60
 Arg Pro Leu Arg Ser Thr Lys Phe Gln Leu Leu Ile Lys Leu Arg Ile
 65 70 75 80
 Pro His Ala Leu Pro His Ile Phe Ser Gly Leu Lys Ile Ala Ile Gly
 85 90 95

Ser Ala Gly Phe Ala Ala Ile Ala Gly Glu Trp Val Ala Ser Gln Ser
 100 105 110
 Gly Leu Gly Ile Leu Met Leu Glu Ser Arg Arg Asn Tyr Glu Met Glu
 115 120 125
 Leu Ala Phe Ala Gly Leu Ala Thr Leu Ser Ile Leu Thr Leu Ser Leu
 130 135 140
 Phe Gln Ile Thr Leu Leu Ile Glu Lys Leu Ile Phe Ser Leu Phe Arg
 145 150 155 160
 Val Lys Arg Met Ser Leu Lys His Lys Ser Val Ala Lys Lys Ala Leu
 165 170 175
 Ser Val Leu Ala Leu Ile Pro Ile Met Leu Ile Pro Trp Lys Gly Asn
 180 185 190
 Ser Lys Ser Pro Pro Asp Lys Lys Asn Leu Thr Ser Leu Thr Leu Leu
 195 200 205
 Leu Asp Trp Thr Pro Asn Pro Asn His Ile Pro Leu Tyr Ala Gly Val
 210 215 220
 Ala Lys Gly Tyr Phe Lys Gln His Gly Leu Asp Leu Gln Leu Gln Lys
 225 230 235 240
 Asn Thr Asp Ser Ser Ser Ala Val Pro His Val Leu Phe Glu Gln Val
 245 250 255
 Asp Met Ala Leu Tyr His Ala Leu Gly Ile Met Lys Thr Ser Ile Lys
 260 265 270
 Gly Met Pro Ile Gln Ile Val Gly Arg Leu Ile Asp Ser Ser Leu Gln
 275 280 285
 Asp Phe Ser Thr Glu Val Arg Thr Pro Ser Thr Asn Leu Lys Thr
 290 295 300

<210>1085

<211>460

<212>PRT

<213>Chlamydia pneumoniae

<400>1085

Met Arg Gln Glu Lys Asp Ser Leu Gly Ile Val Glu Val Pro Glu Asp
 1 5 10 15
 Lys Leu Tyr Gly Ala Gln Thr Met Arg Ser Arg Asn Phe Phe Ser Trp
 20 25 30
 Gly Pro Glu Leu Met Pro Tyr Glu Val Ile Arg Ala Leu Val Trp Ile
 35 40 45
 Lys Lys Cys Ala Ala Gln Ala Asn Gln Asp Leu Gly Phe Leu Asp Ser
 50 55 60
 Lys His Cys Asp Met Ile Val Ala Ala Ala Asp Glu Ile Leu Glu Gly
 65 70 75 80
 Gly Phe Glu Glu His Phe Pro Leu Lys Val Trp Gln Thr Gly Ser Gly
 85 90 95
 Thr Gln Ser Asn Met Asn Val Asn Glu Val Ile Ala Asn Leu Ala Ile
 100 105 110
 Arg His His Gly Gly Val Leu Gly Ser Lys Asp Pro Ile His Pro Asn
 115 120 125
 Asp His Val Asn Lys Ser Gln Ser Ser Asn Asp Val Phe Pro Thr Ala
 130 135 140
 Met His Ile Ala Ala Val Ile Ser Leu Lys Asn Lys Leu Ile Pro Ala
 145 150 155 160
 Leu Asp His Met Ile Arg Val Leu Asp Ala Lys Val Glu Glu Phe Arg
 165 170 175
 His Asp Val Lys Ile Gly Arg Thr His Leu Met Asp Ala Val Pro Met
 180 185 190
 Thr Leu Gly Gln Glu Phe Ser Gly Tyr Ser Ser Gln Leu Arg His Cys
 195 200 205
 Leu Glu Ser Ile Ala Phe Ser Leu Ala His Leu Tyr Glu Leu Ala Ile
 210 215 220
 Gly Ala Thr Ala Val Gly Thr Gly Leu Asn Val Pro Glu Gly Phe Val
 225 230 235 240
 Glu Lys Ile Ile His Tyr Leu Arg Lys Xaa Thr Asp Glu Pro Phe Ile
 245 250 255
 Pro Ala Xaa Asn Tyr Phe Ser Ala Leu Ser Cys His Asp Ala Leu Val

<211>20
<212>DNA
<400>1396
gaccttgcca gcttgggtcg 20
<210>1397
<211>20
<212>DNA
<400>1397
gctgctaaat cccatcgctt 20
<210>1398
<211>20
<212>DNA
<400>1398
gttttgtggc tttggcagtg 20
<210>1399
<211>20
<212>DNA
<400>1399
actttcctaa gaagcgtagc 20
<210>1400
<211>20
<212>DNA
<400>1400
gaggaatggc gcaggagtta 20
<210>1401
<211>20
<212>DNA
<400>1401
gcagtgaaaa cggaatccag 20
<210>1402
<211>20
<212>DNA
<400>1402
gcgtggggat tgtagggata 20
<210>1403
<211>20
<212>DNA
<400>1403
ggccggggat caatcagcta 20
<210>1404
<211>20
<212>DNA
<400>1404
gaataagatg caggcggaag 20
<210>1405
<211>20
<212>DNA
<400>1405
gggagacgtt tgtgcgtaaa 20
<210>1406
<211>20
<212>DNA
<400>1406
cgtcctgcag gtgttattgt 20
<210>1407
<211>20
<212>DNA
<400>1407
caaggggtgt agagaaagga 20
<210>1408
<211>20
<212>DNA
<400>1408
gaagacaaac cttgtcctgg 20

Thr Val Met Thr Thr Ile Thr Ala Ala Val Gln Val Gly Met Met Leu
 275 280 285
 Ala Ala Phe Leu Phe Met Lys Gln Met Ser Asp Leu Ser Asp Val Ile
 290 295 300
 Ser Thr Ala Lys Tyr Phe Asp Lys Asp Ser Asp Phe Leu Ser Lys Ala
 305 310 315 320
 Glu Val Pro Gln Asn Thr Glu Ile Tyr Glu Ile Asn Gly Pro Phe Phe
 325 330 335
 Phe Gly Ile Ala Asp Arg Leu Lys Asn Leu Leu Asn Asp Ile Glu Lys
 340 345 350
 Pro Pro Lys Ile Phe Ile Leu Cys Met Thr Arg Val Pro Thr Ile Asp
 355 360 365
 Ala Ser Ala Met His Ala Leu Glu Glu Phe Phe Leu Glu Cys Asp Arg
 370 375 380
 Gln Gly Thr Leu Leu Leu Leu Ala Gly Val Lys Lys Thr Pro Leu Ala
 385 390 395 400
 Asp Leu Lys Arg Tyr His Leu Asp Glu Leu Ile Gly Val Asp His Ile
 405 410 415
 Phe Ser Asn Ile Lys Ser Ala Leu Leu Phe Ala Gln Ala Leu Thr Asn
 420 425 430
 Leu Glu Ser Lys Thr Ser Thr Arg His Leu Val
 435 440

<210>1087

<211>143

<212>PRT

<213>Chlamydia pneumoniae

<400>1087

Lys Asn Phe Ile Pro Lys Leu Tyr Thr Ser Ile Lys Glu Gly Tyr Ser
 1 5 10 15
 Phe Asn Thr Phe Lys Lys Asp Phe Gln Ala Gly Ile Thr Val Gly Ile
 20 25 30
 Leu Ala Phe Pro Phe Ala Ile Ala Ile Ala Ile Gly Val Gly Val Ser
 35 40 45
 Pro Ile Gln Gly Leu Leu Ala Ser Ile Ile Gly Gly Leu Leu Ala Ser
 50 55 60
 Ala Met Gly Gly Ser Asn Val Leu Ile Ser Gly Pro Ser Ser Ala Phe
 65 70 75 80
 Ile Ser Ile Leu Tyr Cys Leu Ser Ala Lys Tyr Gly Ala Glu Ala Leu
 85 90 95
 Phe Thr Val Thr Leu Leu Ala Gly Val Phe Leu Ile Ala Phe Gly Leu
 100 105 110
 Thr Gly Leu Gly Thr Phe Ile Lys Tyr Met Pro Tyr Pro Val Val Thr
 115 120 125
 Gly Leu Thr His Arg Thr Cys Asp His Tyr Ile Leu Leu Ala Asn
 130 135 140

<210>1088

<211>422

<212>PRT

<213>Chlamydia pneumoniae

<400>1088

Val Thr Met Leu Lys Leu Gln Leu Cys Ala Leu Phe Leu Phe Gly Tyr
 1 5 10 15
 Leu Ala Ile Val Phe Glu His Ile Val Arg Val Asn Lys Ser Ala Ile
 20 25 30
 Ala Leu Ala Met Gly Gly Leu Met Trp Leu Val Cys Phe Ser His Ile
 35 40 45
 Pro Met Ala Asp His Met Ile Leu Val Glu Glu Ile Ala Asp Met Ser
 50 55 60
 Gln Val Ile Phe Phe Leu Phe Ser Ala Met Ala Ile Val Glu Leu Ile
 65 70 75 80
 Asp Ala His Lys Gly Phe Ser Val Ile Val Lys Phe Cys Arg Ile Gln
 85 90 95
 Ser Arg Thr Leu Leu Leu Trp Ala Leu Ile Gly Leu Ser Phe Phe Leu
 100 105 110

Ser Ala Ala Leu Asp Asn Leu Thr Ser Ile Ile Ile Ile Ile Ser Ile
 115 120 125
 Leu Lys Arg Leu Val Lys Ala Arg Glu Asp Arg Leu Leu Leu Gly Ala
 130 135 140
 Ile Cys Val Ile Ala Val Asn Ala Gly Gly Ala Trp Thr Pro Leu Gly
 145 150 155 160
 Asp Val Thr Thr Thr Met Leu Trp Ile Asn Asn Lys Ile Thr Ser Trp
 165 170 175
 Gly Ile Ile Arg Ala Leu Phe Val Pro Ser Leu Val Cys Val Leu Val
 180 185 190
 Ala Gly Phe Cys Gly Gln Phe Phe Leu Arg Lys Arg Gly Ser Thr Leu
 195 200 205
 Ile Ala Lys Asp Val Glu Leu Gln Ser Ala Pro Pro Lys Ser Leu Trp
 210 215 220
 Ile Ile Phe Ile Gly Leu Gly Ser Leu Leu Met Val Pro Val Trp Lys
 225 230 235 240
 Ala Cys Leu Gly Leu Pro Pro Phe Met Gly Ala Leu Leu Gly Leu Gly
 245 250 255
 Leu Val Trp Leu Thr Ser Asp Trp Ile His Ser Pro His Gly Glu Asp
 260 265 270
 Arg Tyr His Leu Arg Val Pro His Ile Leu Thr Lys Ile Asp Ile Ser
 275 280 285
 Ser Ile Thr Phe Phe Ile Gly Ile Leu Leu Ala Val Asn Ala Leu Ser
 290 295 300
 Phe Ala Asn Leu Leu Thr Asp Phe Ser Leu Trp Met Asp Lys Ile Phe
 305 310 315 320
 Ser Arg Asn Val Val Ala Ile Val Ile Gly Leu Leu Ser Ser Val Leu
 325 330 335
 Asp Asn Val Pro Leu Val Ala Xaa Thr Met Gly Met Tyr Thr Leu Pro
 340 345 350
 Leu Asp Asp Thr Leu Trp Lys Leu Ile Ala Tyr Ala Ala Xaa Thr Gly
 355 360 365
 Gly Ser Ile Leu Ile Ile Gly Ser Ala Ala Gly Val Ala Phe Met Gly
 370 375 380
 Leu Glu Lys Val Asp Phe Leu Trp Tyr Phe Lys Arg Ile Ser Trp Ile
 385 390 395 400
 Ala Leu Ala Ser Tyr Phe Gly Gly Leu Phe Ser Tyr Phe Val Leu Glu
 405 410 415
 Ser Leu Asn Phe Phe Ile
 420

<210>1089

<211>624

<212>PRT

<213>Chlamydia pneumoniae

<400>1089

Lys Arg Glu Val Phe Met Lys Lys Gly Lys Leu Gly Ala Ile Val Phe
 1 5 10 15
 Gly Leu Leu Phe Thr Ser Ser Val Ala Gly Phe Ser Lys Asp Leu Thr
 20 25 30
 Lys Asp Asn Ala Tyr Gln Asp Leu Asn Val Ile Glu His Leu Ile Ser
 35 40 45
 Leu Lys Tyr Ala Pro Leu Pro Trp Lys Glu Leu Leu Phe Gly Trp Asp
 50 55 60
 Leu Ser Gln Gln Thr Gln Ala Arg Leu Gln Leu Val Leu Glu Glu
 65 70 75 80
 Lys Pro Thr Thr Asn Tyr Cys Gln Lys Val Leu Ser Asn Tyr Val Arg
 85 90 95
 Ser Leu Asn Asp Tyr His Ala Gly Ile Thr Phe Tyr Arg Thr Glu Ser
 100 105 110
 Ala Tyr Ile Pro Tyr Val Leu Lys Leu Ser Glu Asp Gly His Val Phe
 115 120 125
 Val Val Asp Val Gln Thr Ser Gln Gly Asp Ile Tyr Leu Gly Asp Glu
 130 135 140
 Ile Leu Glu Val Asp Gly Met Gly Ile Arg Glu Ala Ile Glu Ser Leu

145 150 155 160
 Arg Phe Gly Arg Gly Ser Ala Thr Asp Tyr Ser Ala Ala Val Arg Ser
 165 170 175
 Leu Thr Ser Arg Ser Ala Ala Phe Gly Asp Ala Val Pro Ser Gly Ile
 180 185 190
 Ala Met Leu Lys Leu Arg Arg Pro Ser Gly Leu Ile Arg Ser Thr Pro
 195 200 205
 Val Arg Trp Arg Tyr Thr Pro Glu His Ile Gly Asp Phe Ser Leu Val
 210 215 220
 Ala Pro Leu Ile Pro Glu His Lys Pro Gln Leu Thr Gln Ser Cys
 225 230 235 240
 Val Leu Phe Arg Ser Gly Val Asn Ser Gln Ser Ser Ser Ser Ser Leu
 245 250 255
 Phe Ser Ser Tyr Met Val Pro Tyr Phe Trp Glu Glu Leu Arg Val Gln
 260 265 270
 Asn Lys Gln Arg Phe Asp Ser Asn His His Ile Gly Ser Arg Asn Gly
 275 280 285
 Phe Leu Pro Thr Phe Gly Pro Ile Leu Trp Glu Gln Asp Lys Gly Pro
 290 295 300
 Tyr Arg Ser Tyr Ile Phe Lys Ala Lys Asp Ser Gln Gly Asn Pro His
 305 310 315 320
 Arg Ile Gly Phe Leu Arg Ile Ser Ser Tyr Val Trp Thr Asp Leu Glu
 325 330 335
 Gly Leu Glu Glu Asp His Lys Asp Ser Pro Trp Glu Leu Phe Gly Glu
 340 345 350
 Ile Ile Asp His Leu Glu Lys Glu Thr Asp Ala Leu Ile Ile Asp Gln
 355 360 365
 Thr His Asn Pro Gly Gly Ser Val Phe Tyr Leu Tyr Ser Leu Leu Ser
 370 375 380
 Met Leu Thr Asp His Pro Leu Asp Thr Pro Lys His Arg Met Ile Phe
 385 390 395 400
 Thr Gln Asp Glu Val Ser Ser Ala Leu His Trp Gln Asp Leu Leu Glu
 405 410 415
 Asp Val Phe Thr Asp Glu Gln Ala Val Ala Val Leu Gly Glu Thr Met
 420 425 430
 Glu Gly Tyr Cys Met Asp Met His Ala Val Ala Ser Leu Gln Asn Phe
 435 440 445
 Ser Gln Ser Val Leu Ser Ser Trp Val Ser Gly Asp Ile Asn Leu Ser
 450 455 460
 Lys Pro Met Pro Leu Leu Gly Phe Ala Gln Val Arg Pro His Pro Lys
 465 470 475 480
 His Gln Tyr Thr Lys Pro Leu Phe Met Leu Ile Asp Glu Asp Asp Phe
 485 490 495
 Ser Cys Gly Asp Leu Ala Pro Ala Ile Leu Lys Asp Asn Gly Arg Ala
 500 505 510
 Thr Leu Ile Gly Lys Pro Thr Ala Gly Ala Gly Gly Phe Val Phe Gln
 515 520 525
 Val Thr Phe Pro Asn Arg Ser Gly Ile Lys Gly Leu Ser Leu Thr Gly
 530 535 540
 Ser Leu Ala Val Arg Lys Asp Gly Glu Phe Ile Glu Asn Leu Gly Val
 545 550 555 560
 Ala Pro His Ile Asp Leu Gly Phe Thr Ser Arg Asp Leu Gln Thr Ser
 565 570 575
 Arg Phe Thr Asp Tyr Val Glu Ala Val Lys Thr Ile Val Leu Thr Ser
 580 585 590
 Leu Ser Glu Asn Ala Lys Lys Ser Glu Glu Gln Thr Ser Pro Gln Glu
 595 600 605
 Thr Pro Glu Val Ile Arg Val Ser Tyr Pro Thr Thr Ser Ala Leu
 610 615 620
 <210>1090
 <211>310
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1090

Met Arg Lys Leu Ile Leu Cys Asn Pro Arg Gly Phe Cys Ser Gly Val
 1 5 10 15
 Val Arg Ala Ile Gln Val Val Glu Val Ala Leu Glu Lys Trp Gly Ala
 20 25 30
 Pro Ile Tyr Val Lys His Glu Ile Val His Asn Arg His Val Val Asn
 35 40 45
 Ala Leu Arg Ala Lys Gly Ala Ile Phe Val Glu Glu Leu Val Asp Val
 50 55 60
 Pro Glu Gly Glu Arg Val Ile Tyr Ser Ala His Gly Ile Pro Pro Ser
 65 70 75 80
 Val Arg Ala Glu Ala Lys Ala Arg Lys Leu Ile Asp Ile Asp Ala Thr
 85 90 95
 Cys Gly Leu Val Thr Lys Val His Ser Ala Ala Lys Leu Tyr Ala Ser
 100 105 110
 Lys Gly Tyr Lys Ile Ile Leu Ile Gly His Lys Lys His Val Glu Val
 115 120 125
 Ile Gly Ile Val Gly Glu Val Pro Glu His Ile Thr Val Val Glu Lys
 130 135 140
 Val Ala Asp Val Glu Ala Leu Pro Phe Ser Ser Asp Thr Pro Leu Phe
 145 150 155 160
 Tyr Ile Thr Gln Thr Thr Leu Ser Leu Asp Asp Val Gln Glu Ile Ser
 165 170 175
 Ser Ala Leu Leu Lys Arg Tyr Pro Ser Ile Ile Thr Leu Pro Ser Ser
 180 185 190
 Ser Ile Cys Tyr Ala Thr Thr Asn Arg Gln Lys Ala Leu Arg Ser Val
 195 200 205
 Leu Ser Arg Val Asn Tyr Val Tyr Val Val Gly Asp Val Asn Ser Ser
 210 215 220
 Asn Ser Asn Arg Leu Arg Glu Val Ala Leu Arg Arg Gly Val Pro Ala
 225 230 235 240
 Asp Leu Ile Asn Asn Pro Glu Asp Ile Asp Thr Asn Ile Val Asn His
 245 250 255
 Ser Gly Asp Ile Ala Met Thr Ala Gly Ala Ser Thr Pro Glu Asp Val
 260 265 270
 Val Gln Ala Cys Ile Arg Lys Leu Ser Ser Leu Ile Pro Gly Leu Gln
 275 280 285
 Val Glu Asn Asp Ile Phe Ala Val Glu Asp Val Val Phe Gln Leu Pro
 290 295 300
 Lys Glu Leu Arg Cys Ser
 305 310

<210>1091

<211>245

<212>PRT

<213>Chlamydia pneumoniae

<400>1091

Arg Met Ser Tyr Phe Asn Tyr Gln Lys Asn Ser Val Val Leu Arg Ser
 1 5 10 15
 Leu Gly Leu Leu Ala Lys Phe Phe Ser Arg Leu Leu Tyr Arg Val Phe
 20 25 30
 Phe Ser Phe Arg Glu Gly Ile Tyr Leu Phe Ser Ser Leu Tyr Leu Lys
 35 40 45
 Tyr Pro Arg Leu Phe Phe Tyr Asp Leu Gly Lys Tyr Val Tyr Ser Leu
 50 55 60
 Arg His Cys Pro Tyr Ala Lys Leu Gly Arg Leu Pro Gly Ala Ser Leu
 65 70 75 80
 Leu Lys Glu Gly Asn Val Tyr Gly Glu Thr Pro Trp Ser Val Leu Ala
 85 90 95
 Lys Ile Cys Gln Ala Phe Asp Ile Thr Ser Gln Asp Ile Leu Tyr Asp
 100 105 110
 Leu Gly Cys Gly Leu Gly Lys Val Cys Phe Trp Phe Ser His Val Val
 115 120 125
 Arg Cys Gln Val Ile Gly Ile Asp Asn Gln Pro His Phe Ile Arg Phe
 130 135 140
 Ser Ser Asn Met His Arg Lys Leu Ser Ser Gly Phe Ala Leu Phe Asp

145 150 155 160
 Thr Glu Glu Phe Lys Asn Val Val Leu Ser Gln Ala Ser Tyr Val Tyr
 165 170 175
 Phe Tyr Gly Ser Phe Ser Arg Arg Leu Leu Asn Glu Ile Ile Leu
 180 185 190
 Lys Leu Ser Glu Met Ala Pro Gly Ser Val Val Ile Ser Ile Ser Phe
 195 200 205
 Pro Leu Asp Ser Phe Ser Arg Gly Lys Glu Cys Phe Phe Thr Glu Lys
 210 215 220
 Ser Cys Ser Val Arg Phe Pro Trp Gly Lys Thr Ile Ala Tyr Lys Asn
 225 230 235 240
 Ile Arg Lys Gly Ser
 245
 <210>1092
 <211>385
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1092
 Lys Ser Leu Ser Ala Glu Ser Thr Ser Ser Asn Ser Thr Gly Lys Ala
 1 5 10 15
 Ser Thr Glu Thr Thr Ser Ser Ser Phe Pro Phe Phe Ser Cys Lys Ala
 20 25 30
 Pro Glu Gly Asp Ser Ser Val Asp Lys Thr Phe Thr Val Ser Val Gln
 35 40 45
 Thr Pro Lys Ala Gln Glu Gln Gln Glu Ala Ser Ala Ser Gln Ser Gln
 50 55 60
 Ala Gln Phe His Val Arg Ser Tyr Ser Ser Ser Thr Ile Lys Glu His
 65 70 75 80
 Ser Ala Lys Glu Lys Val Ser Gln Ser Thr Lys Ser Ala Glu Thr Gln
 85 90 95
 Lys His Thr Gln Thr Lys Ser Asp Ala Thr Leu Ser Pro Met Ser Leu
 100 105 110
 Tyr Ser Thr Leu His Lys Glu Val Pro Gln Ala Leu Ser Ser Thr Lys
 115 120 125
 Ser Gln Gln Lys Asp Glu Glu His Arg Asp Gln Arg Gln Gln Glu Gly
 130 135 140
 Tyr Glu Gln Glu Gln Glu Glu Glu Gly Lys Lys Lys Thr Pro Trp
 145 150 155 160
 Cys Thr Val Glu Ser Leu Gln Gln Thr Ser Ser Ser Asn Gln Val Tyr
 165 170 175
 Glu Ser Tyr Thr Pro Ile Ile Pro Asp Pro Ile Val Glu Phe Ala Leu
 180 185 190
 Ser Glu Ser Gln Leu Ser Val Leu Ala Gly Lys Arg Val Thr Asn Leu
 195 200 205
 Asp Val Leu Arg Ile Cys Thr Glu Leu Met Lys Leu Met Leu Lys Ser
 210 215 220
 Arg Ala Asn Asp Thr Met Thr Arg Leu Glu Glu Arg Glu Leu Met Glu
 225 230 235 240
 Arg Glu Ala His Glu Leu Ala Ala Ser Tyr Ser Arg Gln Ala Lys Tyr
 245 250 255
 Ala Arg Trp Leu Gly Ile Ala Thr Ala Thr Leu Gly Ile Leu Gly Ala
 260 265 270
 Ile Ala Pro Met Val Gly Glu Ile Ser Gly Asp Ser Ile Leu Gly Phe
 275 280 285
 Val Gln Arg Ile Ser Gly Arg Phe Lys Asp Ala Thr Ala Lys Thr Phe
 290 295 300
 Phe Lys Gly Ile Gly Lys Val Phe Thr Ser Leu Ser Gln Leu Thr Glu
 305 310 315 320
 Ala Ala Ser Lys Val His Glu Leu Ser Glu Ser Ala Val Arg Ala Val
 325 330 335
 Ala Glu Tyr Arg Lys Glu Val Phe Arg Met Arg Gln Asp Glu Val Thr
 340 345 350
 Arg Thr Ile Glu Glu Val Lys Asp Asn Trp Lys Ser Met Asp Asn Phe
 355 360 365

Leu Leu Asn Ile Leu Gln Thr Glu His Asp Ala Ala Arg Ser Leu Tyr
 370 375 380

Gln

385

<210>1093

<211>112

<212>PRT

<213>Chlamydia pneumoniae

<400>1093

Ile His Arg Arg Xaa Ile Met Thr Val Ser Tyr Gln Ser Ile Ser Thr
 1 5 10 15

Pro Pro Pro Glu Gly Glu Phe Asp Ile Phe Val Asp Gly Asn Ala Thr
 20 25 30

Glu Glu Ala Val Val Ala Ala Glu Val Gln Val Ala Leu Pro Ala Gly
 35 40 45

Glu Gln Tyr Ala Met Leu Arg Ala Thr Ser Glu Leu Cys Phe Gly Ile
 50 55 60

Xaa Thr Gln Ser Glu Cys Ala Leu Thr Gln Ala Leu Pro Pro Lys Glu
 65 70 75 80

Lys Thr Ile Thr Arg Arg Ala Ile Ser Ser Lys Lys Trp His Ile Asn
 85 90 95

Ala Ile Asn Ile Ser Ala Glu Pro Lys Thr Arg Thr Ile Ala Ala Asp
 100 105 110

<210>1094

<211>515

<212>PRT

<213>Chlamydia pneumoniae

<400>1094

Cys Gly Asn Ser Thr Met Ser Ser Trp Leu Ser Gln Ala Ser Glu Val
 1 5 10 15

Leu Leu Asn Gln Asp Pro Tyr Ile Pro Asp Ala Pro Arg Ser Gln Glu
 20 25 30

Ser Ser Val Pro Lys Ile Ser Tyr Ser Ile Thr Val Ala Pro Gln Glu
 35 40 45

Ala Gln Lys Ser Leu Pro Lys Phe Phe Thr Gln Lys Phe Gln Ser Gln
 50 55 60

Cys Lys Ser Glu Pro Pro Ile Thr His His Lys Thr Phe Ile Ile Ala
 65 70 75 80

Thr Pro Arg Glu Arg Ile Leu Arg Phe Gly Ser Ser Phe Glu Ser Gln
 85 90 95

Leu His Asn Thr Ser Gln Ala Gln Thr Ser Ser Pro Trp Asn Leu Phe
 100 105 110

Ser Gln Lys Asn Ser Thr Glu Ala Ser Lys Ala Leu Met Gln Glu Leu
 115 120 125

Thr Met Pro Lys Ser Pro Glu Lys Thr Ser Glu Lys Ala Leu Asp Lys
 130 135 140

Asn Leu Ser Ser Lys Gln Glu Gly Ser Cys Lys Asn Phe Asp Thr Leu
 145 150 155 160

His Leu Gln Gln His Leu Lys Leu Phe Gly Thr Val Asp Ser Leu Tyr
 165 170 175

Ser Gln Ser Leu Asp Ser Glu Gln Gln Glu Leu Leu Gln Ser Arg Arg
 180 185 190

Glu Glu Arg Ser Glu Thr Tyr Ala Asn Gln Gln Ser Ser Glu Lys Lys
 195 200 205

Ile Glu Thr Lys Val Gln Ile Lys Asp Leu Cys Lys Asp Leu Phe Ser
 210 215 220

Gln Asp Gln Asp Ser Asn Gln Lys Gln Lys Lys Ser Pro Phe Gln Gln
 225 230 235 240

Asp Thr Ser Arg Lys Asn Arg Ile Ala Lys Ala Ala Gln Ala Val Pro
 245 250 255

Val Ile Pro Pro Pro Ser Ile Gly Val Phe Thr Leu Ser Tyr Leu Leu
 260 265 270

Thr Lys Gln Gly Ile Leu Ser Asp Phe Ser Ser Tyr Gly Cys His Lys
 275 280 285

Asp Ser Val Glu Ser Thr Gln Arg Glu Leu Asp Ala Leu His Glu Lys
 290 295 300
 Arg Ile Glu Thr Ile Lys Val Ser Ile Glu Lys Glu Lys Arg Glu Arg
 305 310 315 320
 Leu Trp Gly Ser Leu Ser Asp Ile Ile Gly Trp Leu Ala Pro Phe Val
 325 330 335
 Ser Ile Gly Ile Gly Ile Val Ala Ile Leu Ser Gly Gly Gly Ile Phe
 340 345 350
 Ala Phe Ala Gly Phe Phe Ala Gly Leu Ile Ser Leu Val Ile Lys Cys
 355 360 365
 Leu Glu Lys Leu Lys Phe Trp Asp Trp Leu Glu Lys His Leu Pro Ile
 370 375 380
 Asn Asn Glu Glu Leu Arg Arg Lys Ile Ile Thr Ile Ile Gln Trp Val
 385 390 395 400
 Val Tyr Leu Thr Pro Val Ile Leu Ser Ile Cys Thr Leu Lys Val Glu
 405 410 415
 Asn Leu Gly Phe Ser Pro Ile Ile Glu Gly Ala Ile Lys Gly Ile Gln
 420 425 430
 Pro Ala Ile Glu Ser Thr Met Ala Ala Leu Arg Cys Ala Ile Leu Phe
 435 440 445
 Ser Gln Ala Glu Ile Tyr Lys Leu Lys Gly Lys Leu Thr Lys Ile Gln
 450 455 460
 Leu Asp Ile Glu Leu Lys Ser Phe Asp Arg Asp Asp His Tyr Glu Arg
 465 470 475 480
 Ser Gln Glu Leu Leu Asp Asn Met Glu Ser Ser Phe Glu Ala Leu Ser
 485 490 495
 Arg Ile Leu Asn Tyr Met Arg Glu Leu Asp Gln Val Tyr Leu His Ser
 500 505 510
 Leu Arg Gly
 515

<210>1095

<211>191

<212>PRT

<213>Chlamydia pneumoniae

<400>1095

Cys Ile Glu Val Ile Glu Arg Thr Tyr Gly His Leu His Leu Gln Pro
 1 5 10 15
 Thr Pro Leu Met Ser His Leu Asn Tyr Leu Leu Glu Lys Ile Ala Ala
 20 25 30
 Ser Ser Lys Glu Asp Phe Pro Phe Pro Asp Asp Leu Glu Ser Tyr Leu
 35 40 45
 Glu Gly Tyr Val Pro Asp Lys Asn Ile Ala Leu Asp Thr Tyr Gln Lys
 50 55 60
 Ile Phe Lys Ile Ser Ser Glu Asp Leu Glu Lys Val Tyr Lys Glu Gly
 65 70 75 80
 Tyr His Ala Tyr Leu Asp Lys Asp Tyr Ala Lys Ser Ile Thr Val Phe
 85 90 95
 Arg Trp Leu Val Phe Phe Asn Pro Phe Val Ser Lys Phe Trp Phe Ser
 100 105 110
 Leu Gly Ala Ser Leu His Met Ser Glu Gln Tyr Ser Gln Ala Leu His
 115 120 125
 Ala Tyr Gly Val Thr Ala Val Leu Arg Asp Lys Asp Pro Tyr Pro His
 130 135 140
 Tyr Tyr Ala Tyr Ile Cys Tyr Thr Leu Thr Asn Glu His Glu Glu Ala
 145 150 155 160
 Glu Lys Ala Leu Glu Met Ala Trp Val Arg Ala Gln His Lys Pro Leu
 165 170 175
 Tyr Asn Glu Leu Lys Glu Glu Ile Leu Asp Ile Arg Lys His Lys
 180 185 190

<210>1096

<211>339

<212>PRT

<213>Chlamydia pneumoniae

<400>1096

Thr Thr Ala Ser Ser Ser Asn Thr Lys Arg Leu Cys Cys Lys Lys Thr
 1 5 10 15
 Gln Arg Arg Pro Ser Pro Glu Thr Gln Ala Arg Ala Ser Leu Ser Gln
 20 25 30
 Ala Ser Ser Ser Ser Gln Arg Ser Leu Pro Pro Gln Glu Ser Ala Pro
 35 40 45
 Glu Arg Thr Leu Leu Glu Gln Gln Lys Ala Ser Ser Phe Ser Pro Leu
 50 55 60
 Ser Gln Phe Ser Ala Glu Lys Gln Lys Glu Ala Leu Thr Thr Ser Lys
 65 70 75 80
 Ser His Glu Leu Tyr Lys Glu Arg Asp Gln Asp Arg Gln Gln Arg Glu
 85 90 95
 Gln His Asp Arg Lys His Asp Gln Glu Asp Ala Glu Ser Lys Lys
 100 105 110
 Lys Lys Lys Lys Arg Gly Leu Gly Val Glu Ala Val Ala Glu Glu Pro
 115 120 125
 Gly Glu Asn Leu Asp Ile Ala Ala Leu Ile Phe Ser Asp Gln Met Arg
 130 135 140
 Pro Pro Ala Glu Glu Thr Ser Xaa Lys Glu Thr Thr Phe Lys Lys Lys
 145 150 155 160
 Leu Pro Ser Pro Met Ser Val Phe Ser Arg Phe Ile Pro Ser Lys Asn
 165 170 175
 Pro Leu Ser Val Gly Ser Ser Ile His Xaa Pro Ile Gln Thr Pro Lys
 180 185 190
 Val Glu Asn Val Phe Leu Arg Phe Met Lys Leu Met Ala Arg Ile Leu
 195 200 205
 Gly Gln Ala Glu Ala Glu Ala Asn Glu Leu Tyr Met Arg Val Lys Gln
 210 215 220
 Arg Thr Asp Asp Val Asp Thr Leu Thr Val Leu Ile Ser Lys Ile Asn
 225 230 235 240
 Asn Glu Lys Lys Asp Ile Asp Trp Ser Glu Asn Glu Glu Met Lys Ala
 245 250 255
 Leu Leu Asn Arg Ala Lys Glu Ile Gly Val Thr Ile Asp Lys Glu Lys
 260 265 270
 Tyr Thr Trp Thr Glu Glu Glu Lys Arg Leu Leu Lys Glu Asn Val Gln
 275 280 285
 Met Arg Lys Glu Asn Met Glu Lys Ile Thr Gln Met Glu Arg Thr Asp
 290 295 300
 Met Gln Arg His Leu Gln Glu Ile Ser Gln Cys His Gln Ala Arg Ser
 305 310 315 320
 Asn Val Leu Lys Leu Leu Lys Glu Leu Met Asp Thr Phe Ile Tyr Asn
 325 330 335
 Leu Arg Pro

<210>1097

<211>211

<212>PRT

<213>Chlamydia pneumoniae

<400>1097

Phe Ser Phe Phe Phe Tyr Ala Leu Lys Leu Gln Ile Met Asn Met Pro
 1 5 10 15
 Val Pro Ser Ala Val Pro Ser Ala Asn Ile Thr Leu Lys Glu Asp Ser
 20 25 30
 Ser Thr Val Ser Thr Ala Ser Gly Ile Leu Lys Thr Ala Thr Gly Glu
 35 40 45
 Val Leu Val Ser Cys Thr Ala Leu Glu Gly Ser Ser Ser Thr Asp Ala
 50 55 60
 Leu Ile Ser Leu Ala Leu Gly Gln Ile Ile Leu Ala Thr Gln Gln Glu
 65 70 75 80
 Leu Leu Leu Gln Ser Thr Asn Val His Gln Leu Leu Phe Leu Pro Pro
 85 90 95
 Glu Val Val Glu Leu Glu Ile Gln Val Val Asp Leu Leu Val Gln Leu
 100 105 110
 Glu His Ala Glu Thr Ile Thr Ser Glu Pro Gln Glu Thr Gln Thr Gln

115 120 125
 Ser Arg Ser Glu Gln Thr Leu Pro Gln Gln Ser Ser Ser Lys Gln Ser
 130 135 140
 Ala Leu Ser Pro Arg Ser Leu Lys Pro Glu Ile Ser Asp Ser Lys Gln
 145 150 155 160
 Gln Gln Ala Leu Gln Thr Pro Lys Asp Ser Ala Val Arg Lys His Ser
 165 170 175
 Glu Asp Arg His Leu Arg His Lys Leu Ala Leu Pro Tyr Leu Arg Gln
 180 185 190
 Ala Gln Val Leu Arg Asp Pro Tyr Leu Arg Lys Lys Val Arg Gln Lys
 195 200 205
 Glu His Tyr
 210

<210>1098

<211>106

<212>PRT

<213>Chlamydia pneumoniae

<400>1098

Ile Phe Leu Glu Ile Phe Ile Met Lys Lys Val Val Thr Leu Ser Ile
 1 5 10 15
 Ile Phe Phe Ala Thr Tyr Cys Ala Ser Glu Leu Ser Ala Val Thr Val
 20 25 30
 Val Ala Val Pro Leu Ser Glu Ala Pro Gly Lys Ile Gln Val Arg Pro
 35 40 45
 Val Val Gly Leu Gln Phe Gln Glu Glu Gln Gly Ser Val Pro Tyr Ser
 50 55 60
 Phe Tyr Tyr Pro Tyr Asp Tyr Gly Tyr Tyr Tyr Pro Glu Thr Tyr Gly
 65 70 75 80
 Tyr Thr Lys Asn Thr Gly Gln Glu Ser Arg Glu Cys Tyr Thr Arg Phe
 85 90 95
 Glu Asp Gly Thr Ile Phe Tyr Glu Cys Asp
 100 105

<210>1099

<211>301

<212>PRT

<213>Chlamydia pneumoniae

<400>1099

Met Thr Met Pro Ser Thr Gln Phe His Thr Thr Ile Leu Glu Gln Phe
 1 5 10 15
 Ser Leu Phe Leu Ser Val Asp Arg Gly Leu Cys Gln Gln Ser Ile Ala
 20 25 30
 Ala Tyr Arg Gln Asp Ile Ser Ser Phe Leu Thr Ile Ser Ala Ile Ser
 35 40 45
 Ser Pro Gln Asp Ile Ser Gln Asn Ser Val Tyr Ile Phe Ala Glu Glu
 50 55 60
 Leu Tyr Arg Arg Lys Glu Ala Glu Thr Thr Leu Ala Arg Arg Leu Ile
 65 70 75 80
 Ala Leu Lys Val Phe Phe Leu Phe Leu Lys Asp Gln Gln Leu Leu Pro
 85 90 95
 Tyr Pro Pro Ile Ile Glu His Pro Lys Ile Trp Lys Arg Leu Pro Ser
 100 105 110
 Val Leu Thr Pro Gln Glu Val Asp Ala Leu Leu Ala Val Pro Leu Gln
 115 120 125
 Met Glu Lys Asn Pro Arg His Leu Ala Phe Arg Asp Thr Ala Ile Leu
 130 135 140
 His Thr Leu Tyr Ser Thr Gly Val Arg Val Ser Glu Leu Cys Asp Leu
 145 150 155 160
 Arg Leu Gly His Val Ser Asp Asp Cys Ile Arg Val Thr Gly Lys Gly
 165 170 175
 Ser Lys Thr Arg Leu Val Pro Leu Gly Ser Arg Ala Arg Glu Ala Ile
 180 185 190
 Asp Ala Tyr Leu Cys Pro Phe Arg Asp Gln Tyr Gln Lys Lys Asn Pro
 195 200 205
 His Glu Asp His Leu Phe Leu Ser Thr Arg Gly His Lys Leu Glu Arg

210 215 220
 Ser Cys Val Trp Arg Arg Ile His Asn Tyr Ala Lys Gln Val Thr Ser
 225 230 235 240
 Lys Pro Val Ser Pro His Ser Leu Arg His Ala Phe Ala Thr His Leu
 245 250 255
 Leu Asp Asn Lys Ala Asp Leu Arg Val Ile Gln Glu Met Leu Gly His
 260 265 270
 Ala Arg Ile Ala Ser Thr Glu Val Tyr Thr His Val Ala Ala Asp Ser
 275 280 285
 Leu Ile Glu Lys Phe Leu Ala His His Pro Arg Asn Leu
 290 295 300
 <210>1100
 <211>553
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1100
 Val Glu Gly Ile Val Ile Leu Ala Asn Glu Cys Asn Phe Ser Ile Gly
 1 5 10 15
 Ser Gly Glu Phe Ser Ser Tyr Arg Glu Lys Thr Met Glu Arg Lys Arg
 20 25 30
 Phe Ile Asp Cys Asp Ser Thr Lys Ile Leu Gln Glu Leu Ala Leu Asn
 35 40 45
 Pro Leu Asp Leu Thr Ala Pro Gly Val Leu Ser Ala Glu Arg Ile Lys
 50 55 60
 Lys Phe Ser Leu Leu Gly Gly Gly Phe Thr Phe Ser Phe Ala Thr Glu
 65 70 75 80
 Arg Leu Asp Asp Ala Ile Leu Ala Ala Leu Ile Ser Leu Ala Glu Glu
 85 90 95
 Arg Gly Leu His Glu Ser Met Leu Ala Met Gln Gln Gly Gln Val Val
 100 105 110
 Asn Tyr Ile Glu Gly Phe Pro Ser Glu Met Arg Pro Ala Leu His Thr
 115 120 125
 Ala Thr Arg Ala Trp Val Thr Asp Ser Ser Phe Thr Gly Glu Ala Glu
 130 135 140
 Asp Ile Ala Val Arg Ser Arg Val Glu Ala Gln Arg Leu Lys Asp Phe
 145 150 155 160
 Leu Thr Lys Val Arg Ser Gln Phe Thr Thr Ile Val Gln Ile Gly Ile
 165 170 175
 Gly Gly Ser Glu Leu Gly Pro Lys Ala Leu Tyr Arg Ala Leu Arg Ala
 180 185 190
 Tyr Cys Pro Thr Asp Lys His Val His Phe Ile Ser Asn Ile Asp Pro
 195 200 205
 Asp Asn Gly Ala Glu Val Leu Asp Thr Ile Asp Cys Ala Lys Ala Leu
 210 215 220
 Val Val Val Val Ser Lys Ser Gly Thr Thr Ile Glu Thr Ala Val Asn
 225 230 235 240
 Glu Ala Phe Phe Ala Asp Tyr Phe Ala Lys Lys Gly Leu Ser Phe Lys
 245 250 255
 Asp His Phe Ile Ala Val Thr Cys Glu Gly Ser Pro Met Asp Asp Thr
 260 265 270
 Gly Lys Tyr Leu Glu Val Phe His Leu Trp Glu Ser Ile Gly Gly Arg
 275 280 285
 Phe Ser Ser Thr Ser Met Val Gly Gly Val Val Leu Gly Phe Ala Tyr
 290 295 300
 Gly Phe Glu Val Phe Leu Gln Leu Leu Gln Gly Ala Ser Ala Met Asp
 305 310 315 320
 Gln Ile Ala Leu Gln Pro Asn Ala Arg Glu Asn Leu Pro Met Leu Ser
 325 330 335
 Ala Leu Ile Ser Ile Trp Asn Arg Asn Phe Leu Gly Tyr Pro Thr Glu
 340 345 350
 Ala Val Ile Pro Tyr Ser Ser Gly Leu Glu Phe Phe Pro Ala His Leu
 355 360 365
 Gln Gln Cys Cys Met Glu Ser Asn Gly Lys Ser Ile Val Gln Asp Gly
 370 375 380

Arg Arg Val Gly Phe Ser Thr Ser Pro Val Ile Trp Gly Glu Pro Gly
 385 390 395 400
 Thr Asn Gly Gln His Ser Phe Phe Gln Cys Leu His Gln Gly Thr Asp
 405 410 415
 Ile Ile Pro Val Gly Phe Ile Gly Phe Glu Lys Ser Gln Lys Gly Glu
 420 425 430
 Asp Ile Ser Phe Gln Gly Thr Thr Ser Ser Gln Lys Leu Phe Ala Asn
 435 440 445
 Met Ile Ala Gln Ala Ile Ala Leu Ala Cys Gly Ser Glu Asn Thr Asn
 450 455 460
 Pro Asn Lys Asn Phe Asp Gly Asn Arg Pro Ser Ser Val Leu Val Ser
 465 470 475 480
 Ser Gln Leu Asn Pro Tyr Ser Leu Gly Glu Leu Leu Ser Tyr Tyr Glu
 485 490 495
 Asn Lys Ile Val Phe Gln Gly Phe Cys Trp Gly Ile Asn Ser Phe Asp
 500 505 510
 Gln Glu Gly Val Ser Leu Gly Lys Ala Leu Ala Asn Arg Val Leu Glu
 515 520 525
 Leu Leu Glu Gly Ala Asp Ala Ser Asn Phe Pro Glu Ala Ala Ser Leu
 530 535 540
 Leu Thr Leu Phe Asn Ile Lys Phe Arg
 545 550

<210>1101

<211>523

<212>PRT

<213>Chlamydia pneumoniae

<400>1101

Asn Met Pro Gly Ser Val Ser Ser Pro Pro Leu Ser Pro Val Ile Val
 1 5 10 15
 Arg Glu Arg Val Pro Ser Ser Ser Gly Ser Asp Leu Ile Gln Pro His
 20 25 30
 Ala Val Leu Lys Ile Ser Ile Leu Ile Phe Ala Leu Val Thr Ile Leu
 35 40 45
 Gly Ile Val Leu Val Val Ser Ser Ala Leu Gly Ala Leu Pro Ser Leu
 50 55 60
 Val Leu Thr Val Ser Gly Cys Ile Ala Ile Ala Val Gly Leu Ile Gly
 65 70 75 80
 Leu Gly Ile Leu Val Thr Arg Leu Ile Leu Ser Thr Ile Arg Lys Val
 85 90 95
 Asp Ala Met Gly Tyr Asp Ala Ala Val Lys Glu Glu Gln Tyr Leu Ser
 100 105 110
 Arg Ile Arg Glu Leu Glu Ser Glu Asn Arg Glu Ile Arg Asp Arg Asn
 115 120 125
 Arg Ala Val Glu Asp Gln Cys Ala His Leu Ser Glu Glu Asn Lys Asp
 130 135 140
 Leu Arg Asp Pro Glu Tyr Leu His Gly Met Thr Glu Arg Leu Ile Ala
 145 150 155 160
 Ser Leu Glu Ile Glu Asn Gln Ala Leu Val Ala Glu Asn Ile Leu Leu
 165 170 175
 Lys Asp Trp Asn Ala Ser Leu Ser Arg Asp Phe Arg Ala Tyr Lys Gln
 180 185 190
 Lys Phe Pro Leu Gly Ala Leu Glu Pro Trp Lys Glu Asp Ile Ala Cys
 195 200 205
 Ile Met Glu Gln Asn Leu Phe Leu Lys Pro Glu Cys Ile Ala Met Val
 210 215 220
 Lys Ser Leu Pro Leu Glu Thr Gln Arg Leu Phe Leu Tyr Pro Lys Gly
 225 230 235 240
 Phe Gln Ser Leu Val Asn Arg Phe Ala Pro Arg Ser Arg Phe Phe Gln
 245 250 255
 Thr Pro Lys Tyr Glu Tyr Asn Ser Arg Asn Glu Asn Glu Asp Gly Lys
 260 265 270
 Val Ala Ala Val Cys Ala Arg Leu Lys Lys Glu Phe Phe Ser Ala Val
 275 280 285
 Leu Gly Ala Cys Ser Tyr Glu Glu Leu Gly Gly Ile Cys Glu Arg Ala

290 295 300
 Val Ala Leu Lys Glu Thr Leu Pro Leu Pro Glu Ala Val Tyr Asp Thr
 305 310 315 320
 Leu Val Gln Glu Phe Pro Asn Leu Leu Thr Ala Glu Ser Leu Trp Lys
 325 330 335
 Glu Trp Cys Phe Tyr Ser Tyr Pro Tyr Leu Arg Pro Tyr Leu Ser Val
 340 345 350
 Asp Tyr Cys Lys Arg Leu Phe Val Gln Leu Phe Glu Glu Leu Cys Leu
 355 360 365
 Lys Leu Phe Thr Thr Gly Ser Pro Glu Asp Gln Ala Leu Val Arg Leu
 370 375 380
 Phe Ser Tyr Tyr Arg Asn His Ile Pro Ala Val Leu Ala Ser Phe Gly
 385 390 395 400
 Leu Pro Pro Pro Glu Thr Gly Gly Ser Val Phe Val Leu Leu Pro Lys
 405 410 415
 Gln Glu Asn Leu Leu Trp Ser Gln Ile Glu Val Leu Ala Thr Arg Tyr
 420 425 430
 Leu Lys Asp Thr Phe Val Arg Asn Ser Glu Trp Thr Gly Ser Phe Glu
 435 440 445
 Met Met Phe Ser Tyr Asn Glu Met Cys Lys Glu Ile Ser Glu Gly Arg
 450 455 460
 Ile Arg Phe Ala Glu Asp Tyr Glu Thr Arg His Ser Glu Glu Phe Pro
 465 470 475 480
 Pro Ser Pro Leu Ser Glu Glu Gly Glu Gly Glu Glu Phe Leu Pro Pro
 485 490 495
 Cys Ser Glu Glu Glu Val Ser Val Leu Glu Arg Pro Asp Leu Asp Val
 500 505 510
 Asp Ser Met Trp Val Trp His Pro Ser Gly Pro
 515 520
 <210>1102
 <211>335
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1102
 Phe Phe Leu Lys Gly Val Arg Met Ala Phe Lys Glu Val Val Arg Val
 1 5 10 15
 Ala Val Thr Gly Gly Lys Gly Gln Ile Ala Tyr Asn Phe Leu Phe Ala
 20 25 30
 Leu Ala His Gly Asp Val Phe Gly Val Asp Arg Gly Val Asp Leu Arg
 35 40 45
 Ile Tyr Asp Val Pro Gly Thr Glu Arg Ala Leu Ser Gly Val Arg Met
 50 55 60
 Glu Leu Asp Asp Gly Ala Tyr Pro Leu Xaa His Arg Leu Arg Val Thr
 65 70 75 80
 Thr Ser Leu Asn Asp Ala Phe Asp Gly Ile Asp Ala Ala Phe Leu Ile
 85 90 95
 Gly Ala Val Pro Arg Gly Pro Gly Met Glu Arg Gly Asp Leu Leu Lys
 100 105 110
 Gln Asn Gly Gln Ile Phe Ser Leu Gln Gly Ala Ala Leu Asn Thr Ala
 115 120 125
 Ala Lys Arg Asp Ala Lys Ile Phe Val Val Gly Asn Pro Val Asn Thr
 130 135 140
 Asn Cys Trp Ile Ala Met Lys His Ala Pro Arg Leu His Arg Lys Asn
 145 150 155 160
 Phe His Ala Met Leu Arg Leu Asp Gln Asn Arg Met His Ser Met Leu
 165 170 175
 Ala His Arg Ala Glu Val Pro Leu Glu Glu Val Ser Arg Val Val Ile
 180 185 190
 Trp Gly Asn His Ser Ala Lys Gln Val Pro Asp Phe Thr Gln Ala Arg
 195 200 205
 Ile Ser Gly Lys Pro Ala Ala Glu Val Ile Gly Asp Arg Asp Trp Leu
 210 215 220
 Glu Asn Ile Leu Val His Ser Val Gln Asn Arg Gly Ser Ala Val Ile
 225 230 235 240

Glu Ala Arg Gly Lys Ser Ser Ala Ala Ser Ala Ser Arg Ala Leu Ala
 245 250 255
 Glu Ala Ala Arg Ser Ile Phe Cys Pro Lys Ser Asp Glu Trp Phe Ser
 260 265 270
 Ser Gly Val Cys Ser Asp His Asn Pro Tyr Gly Ile Pro Glu Asp Leu
 275 280 285
 Ile Phe Gly Phe Pro Cys Arg Met Leu Pro Ser Gly Asp Tyr Glu Ile
 290 295 300
 Ile Pro Gly Leu Pro Trp Glu Pro Phe Ile Arg Asn Lys Ile Gln Ile
 305 310 315 320
 Ser Leu Asp Glu Ile Ala Gln Glu Lys Ala Ser Val Ser Ser Leu
 325 330 335

<210>1103

<211>82

<212>PRT

<213>Chlamydia pneumoniae

<400>1103

Ser Glu His Thr Pro Glu Glu Asn His Ser Ser Leu Leu Gly Gln Lys
 1 5 10 15
 Ile Asp Arg Ala Ala Ser Ala Ser Ala Arg Asp Ala Asp Ala Ala Glu
 20 25 30
 Asp Phe Pro Leu Ala Ser Ile Thr Ala Leu Pro Arg Phe Cys Thr Glu
 35 40 45
 Cys Thr Lys Met Phe Ser Asn Gln Ser Arg Ser Pro Ile Thr Ser Ala
 50 55 60
 Ala Gly Phe Pro Glu Ile Arg Ala Cys Val Lys Ser Gly Thr Cys Phe
 65 70 75 80
 Ala Glu

<210>1104

<211>275

<212>PRT

<213>Chlamydia pneumoniae

<400>1104

Ser Xaa Cys Ala Ser Lys Ala Leu Asn Val Pro Ile Val Ile Ser Gln
 1 5 10 15
 Gly Ile Leu Arg Pro Ala Ile Asp Glu Asp Gln Ala Gln Leu Phe Thr
 20 25 30
 Glu Arg Val Glu Glu Phe Pro Lys Glu Val Glu Trp Trp Glu Xaa Ala
 35 40 45
 Arg Cys Glu Ile Ser Ile Pro Ser Met Val Ile Pro Pro Asn Leu Gly
 50 55 60
 Ala Leu Phe Ile Lys Ser Gly Val Thr Leu Asn Asn Asp Leu Tyr Ile
 65 70 75 80
 Gln Gly Leu Ala Asp Ala Cys Met Lys Leu Gly Thr Gln Phe Tyr Asp
 85 90 95
 Glu Leu Ile Glu Asp Leu Ala Asp Ile Glu Glu Phe Tyr Asp His Ile
 100 105 110
 Ile Val Thr Pro Gly Ala Asn Ala Ser Ile Leu Pro Glu Leu Lys Asp
 115 120 125
 Met Pro Val Asn Lys Val Lys Gly Gln Leu Leu Glu Ile Ser Trp Pro
 130 135 140
 Lys Asp Leu Ala Met Leu Ser Phe Ser Ile Asn Ala His Lys Tyr Met
 145 150 155 160
 Val Ala Asn Thr Gln Lys Asn Thr Cys Ile Leu Gly Ala Thr Phe Glu
 165 170 175
 His Asn Gln Pro Glu Glu Thr Pro Asp Pro Ala Ile Ala Tyr Gln Glu
 180 185 190
 Ile Met Pro Pro Val Leu Ser Leu Phe Pro Gly Leu Lys Asp Ala Gln
 195 200 205
 Val Leu His Cys Tyr Ala Gly Met Arg Ser Ser Ser Lys Ser Arg Leu
 210 215 220
 Pro Val Ile Ser Arg Ile Arg Glu Lys Leu Trp Phe Leu Gly Gly Leu
 225 230 235 240

PCT/IB98/01890

1109

420 425 430
 Val Leu Leu Ala Leu Gly Ile Pro Phe Tyr Ile Asp Ala Gly Lys Lys
 435 440 445
 Lys Lys Asn Ala Lys Thr Phe Phe Ala Lys Lys Glu Ile Val Gly Met
 450 455 460
 Thr Phe Ile Gly Leu Leu Ala Leu Thr Ala Ile Phe Leu Phe Ser Thr
 465 470 475 480
 Gly Arg Ile Lys Ile

<210>1106

<211>196

<212>PRT

<213>Chlamydia pneumoniae

<400>1106

Leu Met Ala Tyr Gly Thr Arg Tyr Pro Thr Leu Ala Phe His Thr Gly
 1 5 10 15
 Gly Ile Gly Glu Ser Asp Asp Gly Met Pro Pro Gln Pro Phe Glu Thr
 20 25 30
 Phe Cys Tyr Asp Ser Ala Leu Leu Gln Ala Lys Ile Glu Asn Phe Asn
 35 40 45
 Ile Val Pro Tyr Thr Ser Val Leu Pro Lys Glu Leu Phe Gly Asn Ile
 50 55 60
 Val Pro Val Asp Thr Cys Val Lys Ser Phe Lys His Gly Ala Val Leu
 65 70 75 80
 Glu Val Ile Met Ala Gly Arg Gly Ala Ala Leu Ser Asp Gly Thr His
 85 90 95
 Ala Ile Ala Thr Gly Ile Gly Ile Cys Trp Gly Lys Asp Lys Asn Gly
 100 105 110
 Glu Leu Ile Gly Gly Trp Ala Ala Glu Tyr Val Glu Phe Phe Pro Thr
 115 120 125
 Trp Ile Asn Asp Glu Ile Ala Glu Thr His Ala Lys Met Trp Leu Lys
 130 135 140
 Lys Ser Leu Gln His Glu Leu Asp Leu Arg Ser Ile Ala Lys His Ser
 145 150 155 160
 Glu Phe Gln Phe Phe His Asn Tyr Ile Asn Ile Lys Gln Lys Phe Gly
 165 170 175
 Phe Cys Leu Thr Ala Leu Gly Phe Leu Asn Phe Glu Asn Ala Glu Pro
 180 185 190
 Ala Lys Val Asn

<210>1107

<211>165

<212>PRT

<213>Chlamydia pneumoniae

<400>1107

Gln Lys Ala Thr Tyr Asn Phe Tyr Gly Tyr Ala Ser Trp Thr Pro Lys
 1 5 10 15
 Pro Ser Cys Gly Asp Gly Gln Tyr Ser Val Leu Leu Tyr Ser Thr Arg
 20 25 30
 Lys Val Pro Glu Gln Asn Ser Gln Val Thr Gly Trp Ser Leu Asn Ala
 35 40 45
 Ala Gln His Ile His Glu Lys Leu Tyr Leu Phe Gly Arg Ile Asn Gly
 50 55 60
 Ala Thr Gly Thr Ala Leu Pro Ile Asn Arg Ser Tyr Val Leu Gly Leu
 65 70 75 80
 Val Ser Glu Asn Pro Leu Asn Arg His Ser Gln Asp Leu Leu Gly Ile
 85 90 95
 Gly Phe Ala Thr Asn Lys Val Asn Ala Lys Ala Ile Ser Asn Val Asn
 100 105 110
 Lys Leu Arg Arg Tyr Glu Ser Val Met Glu Ala Phe Ala Thr Ile Gly
 115 120 125
 Phe Gly Pro Tyr Ile Ser Leu Thr Pro Asp Phe Gln Leu Tyr Ile His
 130 135 140
 Pro Ala Leu Arg Pro Glu Arg Arg Thr Ser Gln Val Tyr Gly Leu Arg

WO 99/27105

PCT/IB98/01890

145 150 155 160
 Ala Asn Leu Ser Leu
 165
 <210>1108
 <211>354
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1108
 Asn Asn Lys Lys Lys Asp Tyr Ser Gly Glu Phe Leu Thr Thr Asp Thr
 1 5 10 15
 Val Asp Ser Ile Ala Phe Leu Ser Ser Glu Glu Asn Phe Cys Tyr Ile
 20 25 30
 Lys Thr Ile Leu Phe Phe Arg Val Lys Lys Lys His Tyr Ala Phe Phe
 35 40 45
 Tyr Gly Glu Phe Met Ile Xaa Phe Arg Phe Leu Leu Leu Ser Gly Leu
 50 55 60
 Cys Ala Leu Gly Ile Ser Tyr Ala Glu Thr Pro Lys Glu Thr Thr
 65 70 75 80
 Gly His Tyr His Arg Tyr Lys Ala Arg Ile Gln Lys Lys His Pro Glu
 85 90 95
 Ser Ile Lys Glu Ser Ala Pro Ser Glu Thr Pro His His Asn Ser Leu
 100 105 110
 Leu Ser Pro Val Thr Asn Ile Phe Cys Ser His Pro Trp Lys Asp Gly
 115 120 125
 Ile Ser Val Ser Asn Leu Leu Thr Ser Val Glu Lys Ala Thr Asn Thr
 130 135 140
 Gln Ile Ser Leu Asp Phe Ser Ile Leu Pro Gln Trp Phe Tyr Pro His
 145 150 155 160
 Lys Ala Leu Gly Gln Thr Gln Ala Leu Glu Ile Pro Ser Trp Gln Phe
 165 170 175
 Tyr Phe Ser Pro Ser Thr Thr Trp Thr Leu Tyr Asp Ser Pro Thr Ala
 180 185 190
 Gly Gln Gly Ile Val Asp Phe Ser Tyr Thr Leu Ile His Tyr Trp Gln
 195 200 205
 Thr Asn Gly Val Asp Ala Asn Gln Ala Ala Gly Thr Ala Ser Ser Met
 210 215 220
 Asn Asp Tyr Ser Asn Arg Glu Asn Asn Leu Ala Gln Leu Thr Phe Ser
 225 230 235 240
 Gln Thr Phe Pro Gly Asp Phe Leu Thr Leu Ala Ile Gly Gln Tyr Ser
 245 250 255
 Leu Tyr Ala Ile Asp Gly Thr Leu Tyr Asp Asn Asp Gln Tyr Ser Gly
 260 265 270
 Phe Ile Ser Tyr Ala Leu Ser Gln Asn Ala Ser Ala Thr Tyr Ser Leu
 275 280 285
 Gly Ser Thr Gly Ala Tyr Leu Gln Phe Thr Pro Asn Ser Glu Ile Lys
 290 295 300
 Val Gln Leu Gly Phe Gln Asp Ser Tyr Asn Ile Asp Gly Thr Asn Phe
 305 310 315 320
 Ser Ile Tyr Asn Leu Thr Lys Ser Asn Ile Gln Leu Leu Arg Leu Arg
 325 330 335
 Leu Leu Asp Ser Lys Thr Phe Val Trp Arg Trp Thr Val Leu Cys Ile
 340 345 350
 Ala Leu

<210>1109
 <211>286
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1109
 Lys Thr Ser Trp Gln Lys Tyr Lys Lys Tyr Leu Ser Tyr Ser Ile Leu
 1 5 10 15
 Val Gln Lys Ile Ala Arg Tyr Val Met Lys Thr Trp Leu Phe Thr
 20 25 30
 Phe Leu Phe Ser Cys Ser Ser Phe Tyr Ala Ser Cys Arg Tyr Ala Glu

1111

35 40 45
 Val Arg Ser Ile His Glu Val Ala Gly Asp Ile Leu Tyr Asp Glu Glu
 50 55 60
 Asn Phe Trp Leu Ile Leu Asp Leu Asp Asp Thr Leu Leu Gln Gly Gly
 65 70 75 80
 Glu Ala Leu Ser His Ser Ile Trp Lys Ser Lys Ala Ile Gln Gly Leu
 85 90 95
 Gln Lys Gln Gly Thr Pro Glu Gln Glu Ala Trp Glu Ala Val Val Pro
 100 105 110
 Phe Trp Ile Glu Ile Gln Glu Met Gly Thr Val Gln Pro Ile Glu Ser
 115 120 125
 Ala Ile Phe Leu Leu Ile Glu Lys Ile Gln Lys Gln Gly Lys Thr Thr
 130 135 140
 Phe Val Tyr Thr Glu Arg Pro Lys Thr Ala Lys Asp Leu Thr Leu Lys
 145 150 155 160
 Gln Leu His Met Leu Asn Val Ser Leu Glu Asp Thr Ala Pro Gln Pro
 165 170 175
 Gln Ala Pro Leu Pro Lys Asn Leu Leu Tyr Thr Ser Gly Ile Leu Phe
 180 185 190
 Ser Gly Asp Tyr His Lys Gly Pro Gly Leu Asp Leu Phe Leu Glu Ile
 195 200 205
 Cys Thr Pro Leu Pro Ala Lys Ile Ile Tyr Ile Asp Asn Gln Lys Glu
 210 215 220
 Asn Val Leu Arg Ile Gly Asp Leu Cys Gln Lys Tyr Gly Ile Ala Tyr
 225 230 235 240
 Phe Gly Ile Thr Tyr Lys Ala Gln Glu Leu His Pro Pro Ile Tyr Phe
 245 250 255
 Asp Asn Ile Ala Gln Val Gln Tyr Asn Tyr Ser Lys Lys Leu Leu Ser
 260 265 270
 Asn Glu Ala Ala Ala Leu Leu Leu Arg His Gln Met His Glu
 275 280 285

<210>1110

<211>504

<212>PRT

<213>Chlamydia pneumoniae

<400>1110

Val Val Gln Leu Pro Leu Met Val Pro Ile Val His Leu Gln Ile Trp
 1 5 10 15
 Arg Phe Ser Met Ile Tyr Tyr Gly Val Ser Val Met Leu Cys Ala Thr
 20 25 30
 Val Ser Gly Pro Ser Phe Cys Glu Ala Lys Gln Gln Ile Leu Lys Ser
 35 40 45
 Leu His Leu Val Asp Ile Ile Glu Leu Arg Leu Asp Leu Ile Asn Glu
 50 55 60
 Leu Asp Asp Gln Glu Leu His Thr Leu Ile Thr Thr Ala Gln Asn Pro
 65 70 75 80
 Ile Leu Thr Phe Arg Gln His Lys Glu Met Ser Thr Ala Leu Trp Ile
 85 90 95
 Gln Lys Leu Tyr Ser Leu Ala Lys Leu Glu Pro Lys Trp Met Asp Ile
 100 105 110
 Asp Val Ser Leu Pro Lys Thr Ala Leu Gln Thr Ile Arg Lys Ser His
 115 120 125
 Pro Lys Ile Lys Leu Ile Leu Ser Tyr His Thr Asp Lys Asn Glu Asp
 130 135 140
 Leu Asp Ala Ile Tyr Asn Glu Met Leu Ala Thr Pro Ala Glu Ile Tyr
 145 150 155 160
 Lys Ile Val Leu Ser Pro Glu Asn Ser Ser Glu Ala Leu Asn Tyr Ile
 165 170 175
 Lys Lys Ala Arg Leu Leu Pro Lys Pro Ser Thr Val Leu Cys Met Gly
 180 185 190
 Thr His Gly Leu Pro Ser Arg Val Leu Ser Pro Leu Ile Ser Asn Ala
 195 200 205
 Met Asn Tyr Ala Ala Gly Ile Ser Ala Pro Gln Val Ala Pro Gly Gln
 210 215 220

Pro Lys Leu Glu Glu Leu Leu Ser Tyr Asn Tyr Ser Lys Leu Ser Glu
 225 230 235 240
 Lys Ser His Ile Tyr Gly Leu Ile Gly Asp Pro Val Asp Arg Ser Ile
 245 250 255
 Ser His Leu Ser His Asn Phe Leu Leu Ser Lys Leu Ser Leu Asn Ala
 260 265 270
 Thr Tyr Ile Lys Phe Pro Val Thr Ile Gly Glu Val Val Thr Phe Phe
 275 280 285
 Ser Ala Ile Arg Asp Leu Pro Phe Ser Gly Leu Ser Val Thr Met Pro
 290 295 300
 Leu Lys Thr Ala Ile Phe Asp His Val Asp Ala Leu Asp Ala Ser Ala
 305 310 315 320
 Gln Leu Cys Glu Ser Ile Asn Thr Leu Val Phe Arg Asn Gln Lys Ile
 325 330 335
 Leu Gly Tyr Asn Thr Asp Gly Glu Gly Val Ala Lys Leu Leu Lys Gln
 340 345 350
 Lys Asn Ile Ser Val Asn Asn Lys His Ile Ala Ile Val Gly Ala Gly
 355 360 365
 Gly Ala Ala Lys Ala Ile Ala Ala Thr Leu Ala Met Gln Gly Ala Asn
 370 375 380
 Leu His Ile Phe Asn Arg Thr Leu Ser Ser Ala Ala Ala Leu Ala Thr
 385 390 395 400
 Cys Cys Lys Gly Lys Ala Tyr Pro Leu Gly Ser Leu Glu Asn Phe Lys
 405 410 415
 Thr Ile Asp Ile Ile Ile Asn Cys Leu Pro Pro Glu Val Thr Phe Pro
 420 425 430
 Trp Arg Phe Pro Pro Ile Val Met Asp Ile Asn Thr Lys Pro His Pro
 435 440 445
 Ser Pro Tyr Leu Glu Arg Ala Gln Lys His Gly Ser Leu Ile Ile His
 450 455 460
 Gly Tyr Glu Met Phe Ile Glu Gln Ala Leu Leu Gln Phe Ala Leu Trp
 465 470 475 480
 Phe Pro Asp Phe Leu Thr Pro Glu Ser Cys Asp Ser Phe Arg Asn Tyr
 485 490 495
 Val Lys Asn Phe Met Ala Lys Val
 500

<210>1111

<211>384

<212>PRT

<213>Chlamydia pneumoniae

<400>1111

Met Leu Gln Thr Ile Met Ser Glu Thr Ile Ile Thr Thr Pro His Val
 1 5 10 15
 Val Lys Leu Ile Ser Asn Phe Phe Gln Lys Lys Leu Phe Ser Ser Ile
 20 25 30
 Ser Thr Ala Tyr Pro Leu Val Ile Ile Thr Asp Val Ser Val Gln Gln
 35 40 45
 His Leu Leu Gly Pro Ile Leu Asp His Ile Lys Met Leu Gly Tyr Gln
 50 55 60
 Val Ile Val Leu Thr Phe Pro Pro Gly Glu Pro Asn Lys Thr Trp Glu
 65 70 75 80
 Thr Phe Ile Ser Leu Gln Tyr Gln Leu Val Asp Gln Asn Ile Ser Pro
 85 90 95
 Lys Ser Ser Ile Ile Gly Ile Gly Gly Gly Thr Val Leu Asp Met Thr
 100 105 110
 Gly Phe Leu Ala Ala Thr Tyr Cys Arg Gly Leu Pro Leu Tyr Leu Ile
 115 120 125
 Pro Thr Thr Ile Thr Ala Met Val Asp Thr Ser Ile Gly Gly Lys Asn
 130 135 140
 Gly Ile Asn Leu Arg Gly Ile Lys Asn Arg Leu Gly Thr Phe Tyr Leu
 145 150 155 160
 Pro Lys Glu Val Trp Met Cys Pro Gln Phe Leu Ser Thr Leu Pro Arg
 165 170 175
 Glu Glu Trp Tyr His Gly Ile Ala Glu Ala Ile Lys His Gly Phe Ile

180 185 190
 Ala Asp Ala Tyr Leu Trp Glu Phe Leu Asn Ser His Ser Lys Met Leu
 195 200 205
 Phe Ser Ser Ser Gln Ile Leu His Glu Phe Ile Lys Arg Asn Cys Gln
 210 215 220
 Ile Lys Ala Ala Ile Val Ala Glu Asp Pro Tyr Asp Arg Ser Leu Arg
 225 230 235 240
 Lys Ile Leu Asn Phe Gly His Ser Ile Ala His Ala Ile Glu Thr Leu
 245 250 255
 Ala Lys Gly Thr Val Asn His Gly Gln Ala Val Ser Val Gly Met Met
 260 265 270
 Ile Glu Thr Arg Ile Ser Leu Ala Glu Gly Val Met Lys Thr Pro Gln
 275 280 285
 Leu Ile Asp Gln Leu Glu Arg Leu Leu Lys Arg Phe Asn Leu Pro Ser
 290 295 300
 Thr Leu Lys Asp Leu Gln Ser Ile Val Pro Glu His Leu His Asn Ser
 305 310 315 320
 Leu Tyr Ser Pro Glu Asn Ile Ile Tyr Thr Leu Gly Tyr Asp Lys Lys
 325 330 335
 Asn Leu Ser Gln His Glu Leu Lys Met Ile Met Ile Glu His Leu Gly
 340 345 350
 Arg Ala Ala Pro Phe Asn Gly Thr Tyr Cys Ala Ser Pro Asn Met Glu
 355 360 365
 Ile Leu Tyr Asp Ile Leu Trp Ser Glu Cys His Val Met Arg His Cys
 370 375 380
 <210>1112
 <211>376
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1112
 Thr Ser Val Ser Arg Ser His Tyr Leu Val Lys Val Met Lys Asn Ser
 1 5 10 15
 Phe Gly Ser Leu Phe Ser Phe Thr Thr Trp Gly Glu Ser His Gly Pro
 20 25 30
 Ser Ile Gly Val Val Ile Asp Gly Cys Pro Ala Gly Leu Glu Leu His
 35 40 45
 Glu Ser Asp Phe Val Pro Ala Met Lys Arg Arg Arg Pro Gly Asn Pro
 50 55 60
 Gly Thr Ser Ser Arg Lys Glu Asn Asp Ile Val Gln Ile Leu Ser Gly
 65 70 75 80
 Val Tyr Lys Gly Lys Thr Thr Gly Thr Pro Leu Ser Leu Gln Ile Leu
 85 90 95
 Asn Thr Asp Val Asp Ser Ser Pro Tyr Tyr Glu Asn Ser Glu Arg Leu Tyr
 100 105 110
 Arg Pro Gly His Ser Gln Tyr Thr Tyr Glu Lys Lys Phe Gly Ile Val
 115 120 125
 Asp Pro Asn Gly Gly Gly Arg Ser Ser Ala Arg Glu Thr Ala Cys Arg
 130 135 140
 Val Ala Ala Gly Val Val Ala Glu Lys Phe Leu Ala Asn Gln Asn Ile
 145 150 155 160
 Phe Thr Leu Ala Tyr Leu Ser Ser Leu Gly Ser Leu Thr Leu Pro His
 165 170 175
 Tyr Leu Lys Ile Ser Pro Glu Leu Ile His Lys Ile His Thr Ser Pro
 180 185 190
 Phe Tyr Ser Pro Leu Pro Asn Glu Lys Ile Gln Glu Ile Leu Thr Ser
 195 200 205
 Leu His Asp Asp Ser Asp Ser Leu Gly Gly Val Ile Ser Phe Ile Thr
 210 215 220
 Ser Pro Ile His Asp Phe Leu Gly Glu Pro Leu Phe Gly Lys Val His
 225 230 235 240
 Ala Leu Leu Ala Ser Ala Leu Met Ser Ile Pro Ala Ala Lys Gly Phe
 245 250 255
 Glu Ile Gly Lys Gly Phe Ala Ser Ala Gln Met Arg Gly Ser Gln Tyr
 260 265 270

Thr Asp Pro Phe Val Met Glu Gly Glu Asn Ile Thr Leu Lys Ser Asn
 275 280 285
 Asn Cys Gly Gly Thr Leu Gly Gly Ile Thr Ile Gly Val Pro Ile Glu
 290 295 300
 Gly Arg Ile Ala Phe Lys Pro Thr Ser Ser Ile Lys Arg Pro Cys Ala
 305 310 315 320
 Thr Val Thr Lys Thr Lys Lys Glu Thr Thr Tyr Arg Thr Pro Gln Thr
 325 330 335
 Gly Arg His Asp Pro Cys Val Ala Ile Arg Ala Val Pro Val Val Glu
 340 345 350
 Ala Met Ile Asn Leu Val Leu Ala Asp Leu Val Leu Tyr Gln Arg Cys
 355 360 365
 Ser Lys Leu Ser Cys Gln Arg Gln
 370 375

<210>1113

<211>184

<212>PRT

<213>Chlamydia pneumoniae

<400>1113

Trp Lys Leu Glu Leu Arg Asn Val Met Thr Ile Ile Leu Cys Gly Leu
 1 5 10 15
 Pro Thr Ser Gly Lys Ser Ser Leu Gly Lys Ala Leu Ala Lys Phe Leu
 20 25 30
 Asn Leu Pro Phe Tyr Asp Leu Asp Asp Leu Ile Val Ser Asn Tyr Ser
 35 40 45
 Ser Ala Leu Tyr Ser Ser Ser Ala Glu Ile Tyr Lys Ala Tyr Gly Asp
 50 55 60
 Gln Lys Phe Ser Glu Cys Glu Ala Arg Ile Leu Glu Thr Leu Pro Pro
 65 70 75 80
 Glu Asp Ala Leu Ile Ser Leu Gly Gly Gly Thr Leu Met Tyr Glu Ala
 85 90 95
 Ser Tyr Arg Ala Ile Gln Thr Arg Gly Ala Leu Val Phe Leu Ser Val
 100 105 110
 Glu Leu Pro Leu Ile Tyr Glu Arg Leu Glu Lys Arg Gly Leu Pro Glu
 115 120 125
 Arg Leu Lys Glu Ala Met Lys Thr Lys Pro Leu Ser Glu Ile Leu Thr
 130 135 140
 Glu Arg Ile Asp Arg Met Lys Glu Ile Ala Asp Tyr Ile Phe Pro Val
 145 150 155 160
 Asp His Val Asp His Ser Ser Lys Ser Ser Leu Glu Gln Ala Ser Gln
 165 170 175
 Asp Leu Ile Thr Leu Leu Lys Ser
 180

<210>1114

<211>449

<212>PRT

<213>Chlamydia pneumoniae

<400>1114

Val Cys Phe Thr Met Leu Thr Tyr Lys Val Ser Pro Ser Ser Val Tyr
 1 5 10 15
 Gly Asn Ala Phe Ile Pro Ser Ser Lys Ser His Thr Leu Arg Ala Ile
 20 25 30
 Leu Trp Ala Ser Val Ala Glu Gly Lys Ser Thr Ile Tyr Asn Tyr Leu
 35 40 45
 Asp Ser Pro Asp Thr Glu Ala Met Ile Cys Ala Cys Lys Gln Met Gly
 50 55 60
 Ala Ser Ile Lys Lys Phe Pro Gln Ile Leu Glu Ile Val Gly Asn Pro
 65 70 75 80
 Leu Ala Ile Phe Pro Lys Tyr Thr Leu Ile Asp Ala Gly Asn Ser Gly
 85 90 95
 Ile Val Leu Arg Phe Met Thr Ala Leu Ala Cys Val Phe Ser Lys Glu
 100 105 110
 Ile Thr Val Thr Gly Ser Ser Gln Leu Gln Arg Arg Pro Met Ala Pro
 115 120 125

Leu Leu Gln Ala Leu Arg Asn Phe Gly Ala Ser Phe His Phe Ser Ser
 130 135 140
 Asp Lys Ser Val Leu Pro Phe Thr Met Ser Gly Tyr Leu Arg Ser Ala
 145 150 155 160
 Tyr Ser Asp Val Glu Gly Ser Asp Ser Gln Phe Ala Ser Ala Leu Ala
 165 170 175
 Val Ala Cys Ser Leu Ala Glu Gly Pro Cys Ser Phe Thr Ile Ile Glu
 180 185 190
 Pro Lys Glu Arg Pro Trp Phe Asp Leu Ser Leu Trp Trp Leu Glu Lys
 195 200 205
 Leu His Leu Pro Tyr Ser Cys Ser Asp Thr Thr Tyr Ser Phe Pro Gly
 210 215 220
 Ser Ser His Pro Gln Gly Phe Ser Tyr His Val Thr Gly Asp Phe Ser
 225 230 235 240
 Ser Ala Ala Phe Ile Ala Ala Ala Ala Leu Leu Ser Lys Ser Leu Gln
 245 250 255
 Pro Ile Arg Leu Arg Asn Leu Asp Ile Leu Asp Ile Gln Gly Asp Lys
 260 265 270
 Ile Phe Phe Ser Leu Met Gln Asn Leu Gly Ala Ser Ile Gln Tyr Asp
 275 280 285
 Asn Glu Glu Ile Leu Val Phe Pro Ser Ser Phe Ser Gly Gly Ser Ile
 290 295 300
 Asp Met Asp Gly Cys Ile Asp Ala Leu Pro Ile Leu Thr Val Leu Cys
 305 310 315 320
 Cys Phe Ala Asp Ser Pro Ser His Leu Tyr Asn Ala Arg Ser Ser Lys
 325 330 335
 Asp Lys Glu Ser Asp Arg Ile Leu Ala Ile Thr Glu Glu Leu Gln Lys
 340 345 350
 Met Gly Ala Cys Ile Gln Pro Thr His Asp Gly Leu Leu Val Asn Pro
 355 360 365
 Ser Pro Leu Tyr Gly Ala Val Leu Asp Ser His Asp Asp His Arg Ile
 370 375 380
 Ala Met Ala Leu Thr Ile Ala Ala Leu Tyr Ala Ser Gly Asp Ser Arg
 385 390 395 400
 Ile His Asn Thr Ala Cys Val Arg Lys Thr Phe Pro Asn Phe Val Gln
 405 410 415
 Thr Leu Asn Ile Met Glu Ala Arg Ile Glu Glu Cys His Asp Asn Tyr
 420 425 430
 Ser Met Trp Ser Thr His Lys Arg Lys Val Phe Ala Arg Glu Ser Phe
 435 440 445
 Gly

<210>1115

<211>96

<212>PRT

<213>Chlamydia pneumoniae

<400>1115

Arg Cys Glu Gly Glu Ser Ala Lys Gln Gln Arg Thr Val Arg Met Gly
 1 5 10 15
 Arg Ala Ser Ile Gln Pro Ser Ile Ser Ile Glu Pro Pro Glu Asn Asp
 20 25 30
 Glu Gly Asn Thr Lys Ile Ser Ser Leu Ser Tyr Cys Ile Glu Ala Pro
 35 40 45
 Lys Phe Cys Met Arg Glu Lys Lys Ile Leu Ser Pro Trp Ile Ser Lys
 50 55 60
 Met Ser Lys Leu Arg Arg Ile Gly Trp Ser Asp Phe Glu Ser Arg
 65 70 75 80
 Ala Ala Ala Ala Met Lys Ala Ala Leu Leu Lys Ser Pro Val Thr Trp
 85 90 95

<210>1116

<211>283

<212>PRT

<213>Chlamydia pneumoniae

<400>1116

Arg Pro Ser Gln Ser Leu Phe Leu Arg Thr Trp Ser Pro Ser Ser Ser
 1 5 10 15
 Phe Arg Glu His Thr Val Cys Ala Ala Pro Leu Leu Tyr Pro Arg Arg
 20 25 30
 Arg Ser Pro Asp Tyr Leu Phe Ser Pro Thr Gly Cys Pro Met Ser Thr
 35 40 45
 Thr Thr Val Lys His Phe Ile His Thr Ala Ser Arg Trp Glu Pro Val
 50 55 60
 Leu Lys Glu Ile Val Ala Ser Asn Tyr Trp His Ala Gln Trp Ile Asn
 65 70 75 80
 Thr Leu Ser Phe Leu Glu Asn Ser Gly Ala Lys Lys Ile Ser Ala Ser
 85 90 95
 Glu His Pro Thr Glu Val Lys Glu Glu Val Leu Lys His Ala Ala Glu
 100 105 110
 Glu Phe Arg His Gly His Tyr Leu Lys Thr Gln Ile Ser Arg Ile Ser
 115 120 125
 Glu Thr Ser Leu Pro Asp Tyr Thr Ser Lys Asn Leu Leu Gly Gly Leu
 130 135 140
 Leu Thr Lys Tyr Tyr Leu His Leu Leu Asp Leu Arg Thr Cys Arg Val
 145 150 155 160
 Leu Glu Asn Glu Tyr Ser Leu Ser Gly Gln Thr Leu Lys Thr Ala Ala
 165 170 175
 Tyr Ile Leu Val Thr Tyr Ala Ile Glu Leu Arg Ala Ser Glu Leu Tyr
 180 185 190
 Pro Leu Tyr His Asp Ile Leu Lys Glu Ala Gln Ser Lys Ile Thr Val
 195 200 205
 Lys Ser Ile Ile Leu Glu Glu Gln Gly His Leu Gln Glu Met Glu Arg
 210 215 220
 Glu Leu Lys Asp Leu Pro His Gly Glu Gly Thr Leu Arg Leu Cys Leu
 225 230 235 240
 Pro Ile Arg Arg Gly Ala Leu Leu Ala Val Cys Arg Glu Ile Arg Thr
 245 250 255
 Asn Asp Leu Arg Ser Phe Leu Asp Phe Tyr Lys Val Leu Glu Phe Phe
 260 265 270
 Leu Asp Asp Lys Ser Glu Val Arg Gln Ile Thr
 275 280

<210>1117

<211>505

<212>PRT

<213>Chlamydia pneumoniae

<400>1117

Leu Val Met Phe Leu Asp Phe Ser Glu Pro Ser Ile Ser Arg Lys Tyr
 1 5 10 15
 Gln Ser His Leu Phe Asn Gly Arg Ser Asn Ala Leu Thr Lys Pro Gln
 20 25 30
 Tyr Leu Arg Tyr Gly Gly Lys Trp Val Ser Arg Gly Arg Arg Ala Leu
 35 40 45
 Ala Asn Ser Arg Asn Gln Ala Ser Tyr Asn Arg Asp Ser Cys Gln Gly
 50 55 60
 Lys Arg Asn His Lys Asp Asn His Lys Leu Leu Cys Arg Thr Met Glu
 65 70 75 80
 Gly Ser Met Asp Lys Gln Ser Ser Gly Asn Ser Gly Cys Ile Trp His
 85 90 95
 Pro Phe Thr Gln Ser Ala Leu Asp Ser Thr Pro Ile Lys Ile Val Arg
 100 105 110
 Gly Glu Gly Ala Tyr Leu Tyr Ala Glu Ser Gly Thr Arg Tyr Leu Asp
 115 120 125
 Ala Ile Ser Ser Trp Trp Cys Asn Leu His Gly His Gly His Pro Tyr
 130 135 140
 Ile Thr Lys Lys Leu Cys Glu Gln Ala Gln Lys Leu Glu His Val Ile
 145 150 155 160
 Phe Ala Asn Phe Thr His Glu Pro Ala Leu Glu Leu Val Ser Lys Leu
 165 170 175
 Ala Pro Leu Leu Pro Glu Gly Leu Glu Arg Phe Phe Phe Ser Asp Asn

180 185 190
 Gly Ser Thr Ser Ile Glu Ile Ala Met Lys Ile Ala Val Gln Tyr Tyr
 195 200 205
 Tyr Asn Gln Asn Lys Ala Lys Ser His Phe Val Gly Leu Ser Asn Ala
 210 215 220
 Tyr His Gly Asp Thr Phe Gly Ala Met Ser Ile Ala Gly Thr Ser Pro
 225 230 235 240
 Thr Thr Val Pro Phe His Asp Leu Phe Leu Pro Ser Ser Thr Ile Ala
 245 250 255
 Ala Pro Tyr Tyr Gly Lys Glu Glu Leu Ala Ile Ala Gln Ala Lys Thr
 260 265 270
 Val Phe Ser Glu Ser Asn Ile Ala Ala Phe Ile Tyr Glu Pro Leu Leu
 275 280 285
 Gln Gly Ala Gly Gly Met Leu Met Tyr Asn Pro Glu Gly Leu Lys Glu
 290 295 300
 Ile Leu Lys Leu Ala Lys His Tyr Gly Val Leu Cys Ile Ala Asp Glu
 305 310 315 320
 Ile Leu Thr Gly Phe Gly Arg Thr Gly Pro Leu Phe Ala Ser Glu Phe
 325 330 335
 Thr Asp Ile Pro Pro Asp Ile Ile Cys Leu Ser Lys Gly Leu Thr Gly
 340 345 350
 Gly Tyr Leu Pro Leu Ala Leu Thr Val Thr Thr Lys Glu Ile His Asp
 355 360 365
 Ala Phe Val Ser Gln Asp Arg Met Lys Ala Leu Leu His Gly His Thr
 370 375 380
 Phe Thr Gly Asn Pro Leu Gly Cys Ser Ala Ala Leu Ala Ser Leu Asp
 385 390 395 400
 Leu Thr Leu Ser Pro Glu Cys Leu Gln Gln Arg Gln Met Ile Glu Arg
 405 410 415
 Cys His Gln Glu Phe Gln Glu Ala His Gly Ser Leu Trp Gln Arg Cys
 420 425 430
 Glu Val Leu Gly Thr Val Leu Ala Leu Asp Tyr Pro Ala Glu Ala Thr
 435 440 445
 Gly Tyr Phe Ser Gln Tyr Arg Asp His Leu Asn Arg Phe Phe Leu Glu
 450 455 460
 Arg Gly Val Leu Leu Arg Pro Leu Gly Asn Thr Leu Tyr Val Leu Pro
 465 470 475 480
 Pro Tyr Cys Ile Gln Glu Glu Asp Leu Arg Ile Ile Tyr Ser His Leu
 485 490 495
 Gln Asp Ala Leu Cys Leu Gln Pro Gln
 500 505

<210>1118

<211>219

<212>PRT

<213>Chlamydia pneumoniae

<400>1118

Met Gln Arg Ile Ile Ile Val Gly Ile Asp Thr Gly Val Gly Lys Thr
 1 5 10 15
 Ile Val Ser Ala Ile Leu Ala Arg Ala Leu Asn Ala Glu Tyr Trp Lys
 20 25 30
 Pro Ile Gln Ala Gly Asn Leu Glu Asn Ser Asp Ser Asn Ile Val His
 35 40 45
 Glu Leu Ser Gly Ala Tyr Cys His Pro Glu Ala Tyr Arg Leu His Lys
 50 55 60
 Pro Leu Ser Pro His Lys Ala Ala Gln Ile Asp Asn Val Ser Ile Glu
 65 70 75 80
 Glu Ser His Ile Cys Ala Pro Lys Thr Thr Ser Asn Leu Ile Ile Glu
 85 90 95
 Thr Ser Gly Gly Phe Leu Ser Pro Cys Thr Ser Lys Arg Leu Gln Gly
 100 105 110
 Asp Val Phe Ser Ser Trp Ser Cys Ser Trp Ile Leu Val Ser Gln Ala
 115 120 125
 Tyr Leu Gly Ser Ile Asn His Thr Cys Leu Thr Val Glu Ala Met Arg
 130 135 140

Ser Arg Asn Leu Asn Ile Leu Gly Met Val Val Asn Gly Tyr Pro Glu
 145 150 155 160
 Asp Glu Glu His Trp Leu Thr Gln Glu Ile Lys Leu Pro Ile Ile Gly
 165 170 175
 Thr Leu Ala Lys Glu Lys Glu Ile Thr Lys Thr Ile Ile Ser Cys Tyr
 180 185 190
 Ala Glu Gln Trp Lys Glu Val Trp Thr Ser Asn His Gln Gly Ile Gln
 195 200 205
 Gly Val Ser Gly Thr Pro Ser Leu Asn Leu His
 210 215
 <210>1119
 <211>383
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1119
 Pro Met Leu Cys Gln Gln Phe Leu Ile Glu Ala Leu Ala Arg Arg Lys
 1 5 10 15
 Ser Lys His Thr Tyr Arg Ser Leu Ser Leu Asn Ser His Leu Ile Asp
 20 25 30
 Phe Thr Ser Asn Asp Tyr Leu Gly Phe Ala Ser Ser Pro Glu Leu Arg
 35 40 45
 Lys Glu Tyr Ile Thr Lys Leu His Ala Ile Glu Ser Leu Gly Ala Thr
 50 55 60
 Gly Ser Arg Leu Leu Thr Gly His Ser Gln Leu Cys Gln Arg Ile Glu
 65 70 75 80
 Glu Gln Leu Ala Ala Tyr His Asn Phe Glu Ser Cys Leu Ile Phe Asn
 85 90 95
 Thr Gly Tyr Thr Ala Asn Leu Gly Leu Tyr Ala Leu Ala Thr Asp
 100 105 110
 Gln Asp Arg Ile Leu His Asp Leu Tyr Ile His Ala Ser Ile Tyr Asp
 115 120 125
 Gly Ile Arg Leu Ser Lys Ala Gln Ser Phe Pro Phe Asn His Asn Asp
 130 135 140
 Leu Asn His Leu Glu Lys Arg Leu Ala Ser Ser His Leu Gly Arg Thr
 145 150 155 160
 Phe Val Cys Val Glu Ser Val Tyr Ser Leu His Gly Ser Val Ala Pro
 165 170 175
 Leu Gln Ala Ile Ser Glu Leu Cys Glu Arg Tyr Ser Ala Tyr Leu Ile
 180 185 190
 Val Asp Glu Ala His Ala Val Gly Val Phe Gly Asp Gln Gly Glu Gly
 195 200 205
 Leu Val Ser Ala Leu Gly Leu Gln Asp Lys Val Leu Ala Thr Val Tyr
 210 215 220
 Thr Phe Gly Lys Ala Leu Gly Thr His Gly Ala Ala Ile Ala Gly Ser
 225 230 235 240
 Ser Ile Leu Lys Asp Tyr Leu Ile Asn Phe Cys Arg Pro Phe Ile Tyr
 245 250 255
 Thr Thr Ala Gln Pro Pro His Ala Leu Thr Ala Ile Glu Leu Ala Tyr
 260 265 270
 Glu His Asn Gln Arg Ala Phe Asn Gln Arg Glu His Leu Ser Ala Leu
 275 280 285
 Ile His His Phe Arg Glu Lys Ala Gln Asn Leu Gly Leu Gln Leu Met
 290 295 300
 Lys Asp Asn Thr Thr Thr Pro Ile Gln Ser Ile Cys Val Ser Gly Ser
 305 310 315 320
 His Arg Ala Arg Gln Ala Ala Leu Gln Ile Gln Asn Ser Gly Tyr Asp
 325 330 335
 Val Arg Pro Ile Val Ser Pro Thr Val Lys Gln Arg Glu Glu Leu Leu
 340 345 350
 Arg Ile Cys Leu His Ala Phe Asn Thr Lys Asn Glu Ile Asp His Leu
 355 360 365
 Leu His Thr Leu Glu Gln Ile Phe Leu Cys Asn Val Ser Ser Leu
 370 375 380
 <210>1120

<211>334

<212>PRT

<213>Chlamydia pneumoniae

<400>1120

Ala Lys His Met Arg Glu Glu Thr Val Ser Trp Ser Leu Glu Asp Ile
 1 5 10 15
 Arg Glu Ile Tyr His Thr Pro Val Phe Glu Leu Ile His Lys Ala Asn
 20 25 30
 Ala Ile Leu Arg Ser Asn Phe Leu His Ser Glu Leu Gln Thr Cys Tyr
 35 40 45
 Leu Ile Ser Ile Lys Thr Gly Gly Cys Val Glu Asp Cys Ala Tyr Cys
 50 55 60
 Ala Gln Ser Ser Arg Tyr His Thr His Val Thr Pro Glu Pro Met Met
 65 70 75 80
 Lys Ile Val Asp Val Val Glu Arg Ala Lys Arg Ala Val Glu Leu Gly
 85 90 95
 Ala Thr Arg Val Cys Leu Gly Ala Ala Trp Arg Asn Ala Lys Asp Asp
 100 105 110
 Arg Tyr Phe Asp Arg Val Leu Ala Met Val Lys Ser Ile Thr Asp Leu
 115 120 125
 Gly Ala Glu Val Cys Cys Ala Leu Gly Met Leu Ser Glu Glu Gln Ala
 130 135 140
 Lys Lys Leu Tyr Asp Ala Gly Leu Tyr Ala Tyr Asn His Asn Leu Asp
 145 150 155 160
 Ser Ser Pro Glu Phe Tyr Glu Thr Ile Ile Thr Thr Arg Ser Tyr Glu
 165 170 175
 Asp Arg Leu Asn Thr Leu Asp Val Val Asn Lys Ser Gly Ile Ser Thr
 180 185 190
 Cys Cys Gly Gly Ile Val Gly Met Gly Glu Ser Glu Glu Asp Arg Ile
 195 200 205
 Lys Leu Leu His Val Leu Ala Thr Arg Asp His Ile Pro Glu Ser Val
 210 215 220
 Pro Val Asn Leu Leu Trp Pro Ile Asp Gly Thr Pro Leu Gln Asp Gln
 225 230 235 240
 Pro Pro Ile Ser Phe Trp Glu Val Leu Arg Thr Ile Ala Thr Ala Arg
 245 250 255
 Val Val Phe Pro Arg Ser Met Val Arg Leu Ala Ala Gly Arg Ala Phe
 260 265 270
 Leu Thr Val Glu Gln Gln Thr Leu Cys Phe Leu Ala Gly Ala Asn Ser
 275 280 285
 Ile Phe Tyr Gly Asp Lys Leu Leu Thr Val Glu Asn Asn Asp Ile Asp
 290 295 300
 Glu Asp Ala Glu Met Ile Lys Leu Leu Gly Leu Ile Pro Arg Pro Ser
 305 310 315 320
 Phe Gly Ile Glu Arg Gly Asn Pro Cys Tyr Ala Asn Asn Ser
 325 330

<210>1121

<211>259

<212>PRT

<213>Chlamydia pneumoniae

<400>1121

Ser Glu Phe Met Val Ser Thr Pro Phe Leu Thr Val Phe Ser Met Glu
 1 5 10 15
 Lys Leu Leu Ser Lys Ile Phe Leu Asp Tyr Leu Glu Ala Phe Gly Leu
 20 25 30
 Leu Ser Asp Phe Leu Asp His Gln Ala Val Ile Lys Phe Glu Leu
 35 40 45
 Glu Thr His Phe Ser Tyr Tyr Pro Val Ser Gly Phe Val Ala Pro His
 50 55 60
 Gln Tyr Leu Ser Leu Leu Gln Asp Arg Tyr Phe Pro Ile Ala Ser Val
 65 70 75 80
 Met Arg Thr Leu Asp Lys Asp Asn Phe Ser Leu Thr Pro Asp Leu Ile
 85 90 95
 His Asp Leu Leu Gly His Val Pro Trp Leu Leu His Pro Ser Phe Ser

100 105 110
 Glu Phe Phe Ile Asn Met Gly Arg Leu Phe Thr Lys Val Ile Glu Lys
 115 120 125
 Val Gln Ala Leu Pro Ser Lys Lys Gln Arg Ile Gln Thr Leu Gln Ser
 130 135 140
 Asn Leu Ile Ala Ile Val Arg Cys Phe Trp Phe Thr Val Glu Ser Gly
 145 150 155 160
 Leu Ile Glu Asn His Glu Gly Arg Lys Ala Tyr Gly Ala Val Leu Ile
 165 170 175
 Ser Ser Pro Gln Glu Leu Gly His Ala Phe Ile Asp Asn Val Arg Val
 180 185 190
 Leu Pro Leu Glu Leu Asp Gln Ile Ile Arg Leu Pro Phe Asn Thr Ser
 195 200 205
 Thr Pro Gln Glu Thr Leu Phe Ser Ile Arg His Phe Asp Glu Leu Val
 210 215 220
 Glu Leu Thr Ser Lys Leu Glu Trp Met Leu Asp Gln Gly Leu Leu Glu
 225 230 235 240
 Ser Ile Pro Leu Tyr Asn Gln Glu Lys Tyr Leu Ser Gly Phe Glu Val
 245 250 255
 Leu Cys Gln

<210>1122

<211>264

<212>PRT

<213>Chlamydia pneumoniae

<400>1122

Met Gly Ser Ser Met His Val Gly Val Ile Gly Cys Ser Gly Arg Thr
 1 5 10 15
 Gly Lys Val Ile Val Ser Ala Leu Glu Gln Ser Ser Glu Tyr Thr Leu
 20 25 30
 Gly Pro Gly Phe Ser Arg Ser Ser Ala Leu Thr Leu Phe Gln Val Ile
 35 40 45
 Ala His Asn Asp Val Leu Val Asp Phe Ser His Pro Leu Leu Thr Lys
 50 55 60
 Glu Val Val Ala His Leu Leu Ile Ser Pro Lys Pro Leu Ile Ile Gly
 65 70 75 80
 Thr Thr Gly Phe Pro Gly Lys Cys Lys Glu Ala His Asp Ser Leu Glu
 85 90 95
 Glu Leu Thr His Ile Val Pro Val Val Cys Pro Asn Ala Ser Leu
 100 105 110
 Gly Ala Tyr Ile His Lys Arg Leu Val Met Leu Leu Ser Gln Leu Cys
 115 120 125
 Asn Pro Gln Phe Asp Ile Arg Ile Arg Glu Thr His His Arg Tyr Lys
 130 135 140
 Lys Asp Ser Leu Ser Gly Thr Ala Gln Asp Leu Leu Asp Thr Ile Gln
 145 150 155 160
 Gln Val Lys Gln Glu Asp Trp Gly Glu Glu Tyr Glu Val Gly Gln Arg
 165 170 175
 Asp Ser Ser Lys Lys Thr Ile Glu Val Gln Ser Ser Arg Val Gly Asp
 180 185 190
 Ile Pro Gly Glu His Glu Val Ala Phe Ile Ser Ser Gly Glu Gln Ile
 195 200 205
 Leu Val Arg His Thr Val Phe Ser Arg Asn Val Phe Gly Arg Gly Ile
 210 215 220
 Leu Ser Ile Leu Asp Trp Leu Lys Thr Leu Asn Pro Gln Pro Gly Leu
 225 230 235 240
 Tyr Ser Leu Gly Asp Thr Leu Glu Leu Val Leu Arg Asn Glu His Cys
 245 250 255
 Leu Leu Lys Lys Thr Thr Asp His
 260

<210>1123

<211>295

<212>PRT

<213>Chlamydia pneumoniae

<400>1123

Ile Trp Ala Ile Val Trp Arg Cys Leu Tyr Leu Ala Gly Ala Ile Gly
 1 5 10 15
 Pro Met Pro Glu Met Val Arg Asp Leu Pro Ile Arg Lys Ile Glu Glu
 20 25 30
 Val Gln Ser Asp Ile Val Val Ser Phe Leu Pro Ser Ser Ala Glu Ser
 35 40 45
 Met Glu Ala Tyr Cys Leu Ser Gln Gly Lys Val Val Phe Ser Asn Ala
 50 55 60
 Ser Thr Tyr Arg Met His Ser Ser Val Pro Ile Ile Ile Pro Glu Val
 65 70 75 80
 Asn Ser Asp His Phe Gln Leu Leu Glu Glu Gln Pro Tyr Pro Gly Lys
 85 90 95
 Ile Ile Thr Ser Pro Asn Cys Cys Val Ser Gly Ile Thr Leu Ala Leu
 100 105 110
 Ala Pro Leu Arg Lys Phe Ser Leu Asp His Val His Ile Val Thr Leu
 115 120 125
 Gln Ser Ala Ser Gly Ala Gly Tyr Pro Gly Val Pro Ser Leu Asp Leu
 130 135 140
 Leu Ala Asn Thr Val Pro His Ile Val Gly Glu Glu Lys Ile Leu
 145 150 155 160
 Arg Glu Thr Val Lys Ile Leu Gly Ser Ser Lys Gln Pro Leu Pro Cys
 165 170 175
 Lys Leu Ser Val Thr Val His Arg Val Pro Val Ala Tyr Gly His Thr
 180 185 190
 Leu Ser Leu His Val Thr Phe Ser Lys Asp Val Asp Leu Asp Glu Ile
 195 200 205
 Leu Tyr Ser Tyr Gln Glu Lys Asn Lys Glu Phe Pro Asn Thr Tyr Gln
 210 215 220
 Leu Tyr Asp Asn Pro Trp Ser Pro Gln Ala Arg Lys His Leu Ser His
 225 230 235 240
 Asp Asp Met Arg Val His Leu Gly Pro Ile Thr Tyr Gly Gly Asp Phe
 245 250 255
 Arg Thr Ile Lys Met Asn Val Leu Ile His Asn Leu Val Arg Gly Ala
 260 265 270
 Ala Gly Thr Leu Leu Ala Ser Met Glu Asn Tyr Phe Phe Asp Tyr Leu
 275 280 285
 Lys Arg Glu Met Cys Leu Arg
 290 295

<210>1124

<211>441

<212>PRT

<213>Chlamydia pneumoniae

<400>1124

Asn Val Ser Lys Ile Val Tyr Lys Phe Gly Gly Thr Ser Leu Ala Thr
 1 5 10 15
 Ala Glu Asn Ile Cys Leu Val Cys Asp Ile Ile Cys Lys Asp Lys Pro
 20 25 30
 Ser Phe Val Val Val Ser Ala Ile Ala Gly Val Thr Asp Leu Leu Val
 35 40 45
 Asp Phe Cys Ser Ser Ser Leu Arg Glu Arg Glu Glu Val Leu Arg Lys
 50 55 60
 Ile Glu Gly Lys His Glu Glu Ile Val Lys Asn Leu Ala Ile Pro Phe
 65 70 75 80
 Pro Val Ser Thr Trp Thr Ser Arg Leu Leu Pro Tyr Leu Gln His Leu
 85 90 95
 Glu Ile Ser Asp Leu Asp Phe Ala Arg Ile Leu Ser Leu Gly Glu Asp
 100 105 110
 Ile Ser Ala Ser Leu Val Arg Ala Val Cys Ser Thr Arg Gly Trp Asp
 115 120 125
 Leu Gly Phe Leu Glu Ala Arg Ser Val Ile Leu Thr Asp Asp Ser Tyr
 130 135 140
 Arg Arg Ala Ser Pro Asn Leu Asp Leu Met Lys Ala His Trp His Gln
 145 150 155 160

Leu Glu Leu Asn Gln Pro Ser Tyr Ile Ile Gln Gly Phe Ile Gly Ser
 165 170 175
 Asn Gly Leu Gly Glu Thr Val Leu Leu Gly Arg Gly Gly Ser Asp Tyr
 180 185 190
 Ser Ala Thr Leu Ile Ala Glu Leu Ala Arg Ala Thr Glu Val Arg Ile
 195 200 205
 Tyr Thr Asp Val Asn Gly Ile Tyr Thr Met Asp Pro Lys Val Ile Ser
 210 215 220
 Asp Ala Gln Arg Ile Pro Glu Leu Ser Phe Glu Glu Met Gln Asn Leu
 225 230 235 240
 Ala Ser Phe Gly Ala Lys Val Leu Tyr Pro Pro Met Leu Phe Pro Cys
 245 250 255
 Met Arg Ala Gly Ile Pro Ile Phe Val Thr Ser Thr Phe Asp Pro Glu
 260 265 270
 Lys Gly Gly Thr Trp Val Tyr Ala Val Asp Lys Ser Val Ser Tyr Glu
 275 280 285
 Pro Arg Ile Lys Ala Leu Ser Leu Ser Gln Tyr Gln Ser Phe Cys Ser
 290 295 300
 Val Asp Tyr Thr Val Leu Gly Cys Gly Gly Leu Glu Glu Ile Leu Gly
 305 310 315 320
 Ile Leu Glu Ser His Gly Ile Asp Pro Glu Leu Met Ile Ala Gln Asn
 325 330 335
 Asn Val Val Gly Phe Val Met Asp Asp Ile Ile Ser Gln Glu Ala
 340 345 350
 Gln Glu His Leu Val Asp Val Leu Ser Leu Ser Ser Val Thr Arg Leu
 355 360 365
 His His Ser Val Ala Leu Ile Thr Met Ile Gly Asp Asn Leu Ser Ser
 370 375 380
 Pro Lys Val Val Ser Thr Ile Thr Glu Lys Leu Arg Gly Phe Gln Gly
 385 390 395 400
 Pro Val Phe Cys Phe Cys Gln Ser Ser Met Ala Leu Ser Phe Val Val
 405 410 415
 Ala Ser Glu Leu Ala Glu Gly Ile Ile Glu Glu Leu His Asn Asp Tyr
 420 425 430
 Val Lys Gln Lys Ala Ile Val Ala Thr
 435 440

<210>1125

<211>271

<212>PRT

<213>Chlamydia pneumoniae

<400>1125

Lys Ser Tyr Ser Arg His Val Gly Arg Ile Met His Leu Leu Thr Ala
 1 5 10 15
 Thr Val Thr Pro Phe Phe Pro Asn Gly Thr Ile Asp Phe Ala Ser Leu
 20 25 30
 Glu Arg Leu Leu Ser Phe Gln Asp Ala Val Gly Asn Gly Val Val Leu
 35 40 45
 Leu Gly Ser Thr Gly Glu Gly Leu Ser Leu Thr Lys Lys Glu Lys Gln
 50 55 60
 Ala Leu Ile Cys Phe Ala Cys Asp Leu Gln Leu Lys Val Pro Leu Phe
 65 70 75 80
 Val Gly Thr Ser Gly Thr Leu Leu Glu Glu Val Leu Asp Trp Ile His
 85 90 95
 Phe Cys Asn Asp Leu Pro Ile Ser Gly Phe Leu Met Thr Thr Pro Ile
 100 105 110
 Tyr Thr Lys Pro Lys Leu Cys Gly Gln Ile Leu Trp Phe Glu Ala Val
 115 120 125
 Leu Asn Ala Ala Lys His Pro Ala Ile Leu Tyr Asn Ile Pro Ser Arg
 130 135 140
 Ala Ala Thr Pro Leu Tyr Leu Asp Thr Val Lys Ala Leu Ala His His
 145 150 155 160
 Pro Gln Phe Leu Gly Ile Lys Asp Ser Gly Gly Ser Val Glu Glu Phe
 165 170 175
 Gln Ser Tyr Lys Ser Ile Ala Pro His Ile Gln Leu Tyr Cys Gly Asp

180 185 190
 Asp Val Phe Trp Ser Glu Met Ala Ala Cys Gly Ala His Gly Leu Ile
 195 200 205
 Ser Val Leu Ser Asn Ala Trp Pro Glu Glu Ala Arg Glu Tyr Val Leu
 210 215 220
 Asn Pro Gln Glu Gln Asp Tyr Arg Ser Leu Trp Met Glu Thr Cys Arg
 225 230 235 240
 Trp Val Tyr Thr Thr Thr Asn Pro Ile Gly Ile Lys Ala Ile Leu Ala
 245 250 255
 Tyr Lys Lys Ala Ile Thr His Ala His Cys Ala Cys Pro Cys Leu
 260 265 270

<210>1126

<211>256

<212>PRT

<213>Chlamydia pneumoniae

<400>1126

Phe Phe Ile Gln Lys Met Lys Tyr Asn Ser Arg Glu Lys Ile Lys Ser
 1 5 10 15
 Ala Leu Arg Ile Cys Ser Ser Tyr Cys Ile Thr Val Phe Arg Asn Asn
 20 25 30
 Phe Ser Leu Ser Cys Tyr Asp Lys Ile Phe Tyr Ser Leu Ser Cys Tyr
 35 40 45
 Val Phe Asn Gly Pro Asn Ser Ile Gly Arg Cys Arg Ser Phe Cys Phe
 50 55 60
 Phe Arg Gly Lys Lys Thr Glu Val Glu Thr Lys Glu Val Lys Ile Lys
 65 70 75 80
 Asp Glu Ile Arg Pro Ser Leu Glu Gly Asn Asp Pro Val Lys Val Ala
 85 90 95
 Glu Ser Phe Pro Lys Arg Arg Ala Ala Leu Glu Ser Leu Ser Ser Gln
 100 105 110
 Ser Ser Ile Gly Asn Leu Cys Ala Ile Ser Asn Phe Leu Asp Ser Gln
 115 120 125
 Met Leu Ser Arg Asn Phe Ser Lys Glu Ile Trp Gly Ser Thr Ile Phe
 130 135 140
 Thr Arg Ser Lys Ser Thr Cys Asp Ala Glu Gly Ser Glu Pro Phe Arg
 145 150 155 160
 Tyr Thr Ala Cys Gly Tyr Leu Ala Gly Leu Arg Ser Lys Leu Ala Gly
 165 170 175
 Ser Tyr Glu Leu Gly Val Thr Ala Gly Leu Leu Gln Gly Arg Leu Lys
 180 185 190
 Asp Val Ser Asp Ser His Arg Thr Arg Ala Thr Ser Ser Ile Leu Ser
 195 200 205
 Val His Gly Ser Met Val Thr Arg Pro Leu Ser Cys Thr Lys Tyr Ile
 210 215 220
 Val Gly Lys Ala Arg Pro Leu Leu Phe Phe Phe Arg Leu Thr Ser Asp
 225 230 235 240
 Val Arg Arg Asp Leu Lys Lys Lys Phe Arg Leu Glu Phe Cys Lys Asp
 245 250 255

<210>1127

<211>119

<212>PRT

<213>Chlamydia pneumoniae

<400>1127

His Ile Leu Phe Tyr Ser Lys Phe Thr Tyr Arg Thr Pro Leu Arg Val
 1 5 10 15
 Thr Ser Pro Ser Gly Arg His Asp Phe Asn Ile Asp Met His Val Ala
 20 25 30
 Pro Lys Ile Gly Ala Val Leu Ser His Gly Thr Arg Glu Ala Lys Glu
 35 40 45
 Ile Pro Gly Ser Ser Lys Asp Tyr Ala Phe Phe Ser Leu Thr Ala Arg
 50 55 60
 Glu Ser Leu Met Ile Ser Glu Lys Leu Ala Met Thr Phe Gln Val Ser
 65 70 75 80
 Glu Val Ile Gln Asn Cys Tyr Ser Gln Cys Thr Lys Val Thr Lys Thr

85 90 95
 Asn Leu Lys Glu Gln Tyr Arg His Leu Ser His Asn Thr Gly Phe Glu
 100 105 110
 Leu Ser Val Lys Ser Ala Phe
 115
 <210>1128
 <211>810
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1128
 Cys Lys Tyr Phe Tyr Leu Arg Ser Tyr Pro Pro Pro Gln His Ser Val
 1 5 10 15
 Gly Ser Ile Ser Ser Pro Ser Lys Leu Arg Val Leu Ala Ile Thr Phe
 20 25 30
 Leu Val Phe Gly Met Leu Leu Leu Ile Ser Gly Ala Leu Phe Leu Thr
 35 40 45
 Leu Gly Ile Pro Gly Leu Ser Ala Ala Ile Ser Phe Gly Leu Gly Ile
 50 55 60
 Gly Leu Ser Ala Leu Gly Gly Val Leu Met Ile Ser Gly Leu Leu Cys
 65 70 75 80
 Leu Leu Val Lys Arg Glu Ile Pro Thr Val Arg Pro Glu Glu Ile Pro
 85 90 95
 Glu Gly Val Ser Leu Ala Pro Ser Glu Glu Pro Ala Leu Gln Ala Ala
 100 105 110
 Gln Lys Thr Leu Ala Gln Leu Pro Lys Glu Leu Asp Gln Leu Asp Thr
 115 120 125
 Asp Ile Gln Glu Val Phe Ala Cys Leu Arg Lys Leu Lys Asp Ser Lys
 130 135 140
 Tyr Glu Ser Arg Ser Phe Leu Asn Asp Ala Lys Lys Glu Leu Arg Val
 145 150 155 160
 Phe Asp Phe Val Val Glu Asp Thr Leu Ser Glu Ile Phe Glu Leu Arg
 165 170 175
 Gln Ile Val Ala Gln Glu Gly Trp Asp Leu Asn Phe Leu Ile Asn Gly
 180 185 190
 Gly Arg Ser Leu Met Met Thr Ala Glu Ser Glu Ser Leu Asp Leu Phe
 195 200 205
 His Val Ser Lys Arg Leu Gly Tyr Leu Pro Ser Gly Asp Val Arg Gly
 210 215 220
 Glu Gly Leu Lys Lys Ser Ala Lys Glu Ile Val Ala Arg Leu Met Ser
 225 230 235 240
 Leu His Cys Glu Ile His Lys Val Ala Val Ala Phe Asp Arg Asn Ser
 245 250 255
 Tyr Ala Met Ala Glu Lys Ala Phe Ala Lys Ala Leu Gly Ala Leu Glu
 260 265 270
 Glu Ser Val Tyr Arg Ser Leu Thr Gln Ser Tyr Arg Asp Lys Phe Leu
 275 280 285
 Glu Ser Glu Arg Ala Lys Ile Pro Trp Asn Gly His Ile Thr Trp Leu
 290 295 300
 Arg Asp Asp Ala Lys Ser Gly Cys Ala Glu Lys Lys Leu Arg Asp Ala
 305 310 315 320
 Glu Glu Arg Trp Lys Lys Phe Arg Lys Ala Val Phe Trp Val Glu Glu
 325 330 335
 Asp Gly Gly Phe Asp Ile Asn Asn Leu Leu Gly Asp Trp Gly Thr Val
 340 345 350
 Leu Asp Pro Tyr Arg Gln Glu Arg Met Asp Glu Ile Thr Phe His Glu
 355 360 365
 Leu Tyr Glu Lys Thr Thr Phe Leu Lys Arg Leu His Arg Lys Cys Ala
 370 375 380
 Leu Ala Lys Thr Thr Phe Glu Lys Xaa Arg Ser Lys Lys Asn Leu Gln
 385 390 395 400
 Ala Val Xaa Glu Ala Asn Ala Arg Arg Leu Lys Tyr Val Arg Asp Trp
 405 410 415
 Tyr Asp Gln Xaa Phe Gln Lys Ala Gly Glu Arg Leu Glu Lys Leu His
 420 425 430

Ala Leu Tyr Pro Glu Val Ser Val Ser Ile Arg Glu Asn Lys Ile Gln
 435 440 445
 Glu Thr Arg Ser Asn Leu Xaa Lys Ala Tyr Glu Ala Ile Glu Xaa Asn
 450 455 460
 Tyr Arg Cys Cys Val Arg Glu Gln Glu Asp Tyr Trp Lys Glu Glu Glu
 465 470 475 480
 Lys Arg Glu Ala Xaa Phe Arg Glu Arg Gly Asn Xaa Ile Leu Ser Pro
 485 490 495
 Glu Glu Leu Glu Xaa Ser Leu Glu Gln Phe Asp His Gly Leu Lys Asn
 500 505 510
 Phe Ser Glu Lys Leu Met Glu Leu Glu Gly His Ile Leu Lys Leu Gln
 515 520 525
 Lys Glu Ala Thr Ala Glu Val Glu Asn Lys Ile Leu Ser Asp Ala Glu
 530 535 540
 Ser Arg Leu Glu Ile Val Phe Glu Asp Val Lys Glu Met Pro Cys Arg
 545 550 555 560
 Ile Glu Glu Ile Glu Lys Thr Leu Arg Met Ala Xaa Leu Pro Leu Leu
 565 570 575
 Pro Thr Lys Lys Ala Phe Glu Lys Ala Cys Ser Gln Tyr Asn Ser Cys
 580 585 590
 Ala Glu Met Leu Glu Lys Val Lys Pro Tyr Cys Lys Glu Ser Leu Ala
 595 600 605
 Tyr Val Thr Ser Lys Glu Arg Leu Val Ser Leu Asp Glu Asp Leu Arg
 610 615 620
 Arg Ala Tyr Thr Glu Cys Gln Lys Arg Phe Gln Gly Asp Ser Gly Leu
 625 630 635 640
 Glu Ser Glu Val Arg Ala Cys Arg Glu Gln Leu Arg Glu Arg Ile Gln
 645 650 655
 Glu Phe Glu Thr Gln Gly Leu Asp Leu Val Glu Lys Glu Leu Leu Cys
 660 665 670
 Val Ser Ser Arg Leu Arg Asn Thr Glu Cys Asp Cys Val Ser Gly Val
 675 680 685
 Lys Lys Glu Ala Pro Pro Gly Lys Lys Phe Tyr Ala Gln Tyr Tyr Asp
 690 695 700
 Glu Ile Tyr Arg Val Arg Val Gln Ser Arg Trp Met Thr Met Ser Glu
 705 710 715 720
 Arg Leu Arg Glu Gly Val Gln Ala Cys Asn Lys Met Leu Lys Ala Gly
 725 730 735
 Leu Ser Glu Glu Asp Lys Val Leu Lys Glu Glu Glu Tyr Trp Leu Tyr
 740 745 750
 Arg Glu Glu Arg Lys Asn Lys Glu Lys Arg Leu Val Gly Thr Lys Ile
 755 760 765
 Val Ala Thr Gln Gln Arg Val Ala Ala Phe Glu Ser Ile Glu Val Pro
 770 775 780
 Glu Ile Pro Glu Ala Pro Glu Glu Lys Pro Ser Leu Leu Asp Lys Ala
 785 790 795 800
 Arg Ser Leu Phe Thr Arg Glu Asp His Thr
 805 810

<210>1129

<211>132

<212>PRT

<213>Chlamydia pneumoniae

<400>1129

Val Ala Cys Arg Ala Gly Ser Ser Glu Gly Ala Thr Glu Thr Pro Ser
 1 5 10 15
 Gly Ile Ser Ser Gly Arg Thr Val Gly Thr Ser Arg Phe Ala Lys Arg
 20 25 30
 His Arg Ser Pro Glu Thr Thr Ser Thr Pro Pro Asn Ala Glu Arg Pro
 35 40 45
 Met Pro Asn Pro Lys Glu Ile Ala Ala Leu Asn Pro Glu Ile Pro Asn
 50 55 60
 Val Arg Lys Arg Ala Pro Glu Ile Lys Lys Ser Thr Pro Arg Thr Lys
 65 70 75 80
 Lys Val Ile Ala Lys Thr Arg Asn Leu Asp Arg Gln Lys Lys Ala Pro

85 90 95
Thr Glu Trp Ser Gly Gly Gly Gly Gly Ser Cys Gly Asp Arg Gly Thr
100 105 110
Cys Ile Met Asn Leu Trp Arg His His Ala Gln Thr His Lys Leu Asn
115 120 125
Pro Leu Ser Tyr
130
<210>1130
<211>320
<212>PRT
<213>Chlamydia pneumoniae
<400>1130
Trp Arg His Arg Phe Ile Met Gln Val Pro Leu Ser Pro Gln Leu Pro
1 5 10 15
Pro Pro Pro Pro Asp His Ser Val Gly Ala Phe Phe Cys Leu Ser Lys
20 25 30
Phe Arg Val Leu Ala Ile Thr Phe Leu Val Leu Gly Val Leu Phe Leu
35 40 45
Ile Ser Gly Ala Leu Phe Leu Thr Leu Gly Ile Ser Gly Leu Ser Ala
50 55 60
Ala Ile Ser Phe Gly Leu Gly Ile Gly Leu Ser Ala Leu Gly Gly Val
65 70 75 80
Leu Val Val Ser Gly Leu Leu Cys Leu Leu Ala Lys Arg Glu Val Pro
85 90 95
Thr Val Arg Pro Glu Glu Ile Pro Glu Gly Val Ser Val Ala Pro Ser
100 105 110
Glu Glu Pro Ala Leu Gln Ala Thr Gln Lys Thr Leu Ala Gln Leu Pro
115 120 125
Lys Glu Leu Asp Gln Leu Asp Arg Tyr Ile Gln Glu Val Val Ser Cys
130 135 140
Leu Gly Lys Leu Lys Asp Leu Arg Cys Glu Asp Gln Gly Leu Leu Lys
145 150 155 160
Asp Ala Lys Glu Lys Leu Gln Val Phe Asp Phe Val Trp Lys Asp Met
165 170 175
Met Thr Glu Phe Val Glu Leu Gln Gln Ile Met Asp Gln Glu Gly Trp
180 185 190
Tyr Leu Lys Cys Leu Ile Gln Glu Met Arg Asp Ile Gly Ser Thr Leu
195 200 205
Phe Met Ser Gln Val Ser Leu Phe Lys Leu Trp Glu Trp Leu Gly Tyr
210 215 220
Leu Pro Ser Gly Asp Val Arg Gly Glu Arg Leu Lys Lys Ser Ala Arg
225 230 235 240
Glu Val Val Asp Arg Phe Met Arg Arg Ile Cys Asp Thr Arg Lys Val
245 250 255
Ala Met Thr Phe Asp Arg Asn Ala Tyr Gly Val Ala Lys Thr Ala Phe
260 265 270
Glu Lys Ala Phe Gly Ala Leu Glu Thr Cys Val Tyr Lys Ser Met Thr
275 280 285
Glu Ser Tyr Arg Glu Ala Phe Cys Glu Tyr Lys Lys Thr Lys Ile Leu
290 295 300
Arg Asp Glu Glu Lys Ile Leu Arg Ile Cys Tyr Leu Glu Leu Arg Arg
305 310 315 320
<210>1131
<211>249
<212>PRT
<213>Chlamydia pneumoniae
<400>1131
Gly Glu Asp Ile Lys Asp Met Leu Ser Arg Val Glu Glu Ile Glu Met
1 5 10 15
Met Leu Arg Val Ile Glu Leu Pro Leu Leu Pro Ile Lys Gln Ala Leu
20 25 30
Glu Lys Ala Phe Val Gln Tyr Asn Ser Tyr Lys Ala Lys Leu Thr Lys
35 40 45
Val Glu Pro Cys Phe Arg Glu Ser Pro Ala Tyr Ile Thr Ser Glu Glu

50 55 60
 Arg Leu Xaa Ser Leu Asp Gln Thr Leu Glu Arg Ala Tyr Lys Glu Tyr
 65 70 75 80
 Gln Lys Arg Phe Gln Glu Pro Ser Arg Leu Glu Ser Glu Val Ser Gly
 85 90 95
 Cys Arg Glu His Leu Arg Glu Gln Val Lys Gln Phe Glu Thr Gln Gly
 100 105 110
 Leu Asp Leu Ile Lys Glu Glu Leu Ile Phe Val Ser Asp Val Leu Phe
 115 120 125
 Arg Lys Met Val Ser Cys Leu Val Ser Thr Val His Val Pro Phe Met
 130 135 140
 Glu Phe Tyr Tyr Glu Tyr Phe Glu Leu His Arg Leu Arg Leu Arg Ala
 145 150 155 160
 Gln Trp Met Ala Asn Ala Glu Ile Tyr Ser Lys Val Arg Lys Ala Phe
 165 170 175
 Pro Glu Met Leu Lys Glu Thr Leu Glu Lys Ala Lys Ala Pro Arg Glu
 180 185 190
 Glu Glu Tyr Trp Leu Leu Cys Glu Glu Arg Lys Ser Lys Glu Lys Arg
 195 200 205
 Leu Ile Leu Asn Lys Ile Glu Ala Ala Gln Gln Arg Val Lys Asp Leu
 210 215 220
 Glu Pro Pro Pro Ile Lys Glu Thr Gly Lys Gln Lys Arg Lys Lys Glu
 225 230 235 240
 Tyr Ser Phe Phe Ile Arg Leu Lys Ser
 245

<210>1132

<211>679

<212>PRT

<213>Chlamydia pneumoniae

<400>1132

Met Pro Glu Pro Leu Tyr Thr Asn Lys Leu Ile Thr Glu Lys Ser Pro
 1 5 10 15
 Tyr Leu Leu Leu Tyr Ala His Thr Pro Val Asn Trp Tyr Pro Trp Gly
 20 25 30
 Ala Glu Ala Phe His Ile Ala Ala Ile Glu Asn Lys Pro Val Phe Leu
 35 40 45
 Ser Ile Gly Cys Lys His Ser Arg Trp Cys Gln Val Met Leu Gln Glu
 50 55 60
 Ser Tyr Thr Asn Pro Glu Ile Ala Ala Met Leu Asn Glu Tyr Phe Val
 65 70 75 80
 Asn Val Lys Val Asp Lys Glu Glu Leu Pro Tyr Val Ala Lys Leu Tyr
 85 90 95
 Gly Asp Leu Ala Gln Met Leu Ala Val Ser Gly Asp His Gln Glu Thr
 100 105 110
 Val Ser Trp Pro Leu Asn Val Phe Leu Thr Pro Asp Leu Val Pro Phe
 115 120 125
 Phe Ser Val Asn Tyr Leu Gly Asn Glu Gly Lys Leu Gly Leu Pro Ser
 130 135 140
 Phe Pro Gln Ile Ile Asp Lys Leu His Phe Met Trp Glu Asp Ala Glu
 145 150 155 160
 Glu Arg Glu Ala Leu Val Glu Gln Ala Met Arg Phe Leu Glu Ile Ala
 165 170 175
 Ser Phe Leu Glu Gly Cys Val Arg Lys Glu Ile Leu Asp Glu Ser Ser
 180 185 190
 Leu Lys Arg Thr Val Ala Ala Leu Tyr Gln Asp Ile Asp Pro His Tyr
 195 200 205
 Gly Gly Val Lys Ala Phe Pro Lys Arg Leu Pro Gly Leu Leu Leu Gln
 210 215 220
 Phe Phe Leu Arg Tyr Ser Leu Glu Tyr Gln Glu Ser Arg Gly Leu Phe
 225 230 235 240
 Phe Val Asp Arg Ser Leu Ser Met Val Ala Leu Gly Gly Val Arg Asp
 245 250 255
 His Ile Gly Gly Val Tyr Ser Tyr Thr Ile Asp Asp Lys Trp Leu
 260 265 270

Ile Pro Ala Phe Glu Lys Arg Leu Ile Asp Asn Ala Leu Met Ala Leu
 275 280 285
 Asn Tyr Leu Glu Ala Trp Ala Cys Leu Gly Lys Glu Glu Tyr Arg Gly
 290 295 300
 Ile Gly Lys Gln Ile Leu Ser Tyr Ile Leu Ser Glu Leu Tyr Ser Pro
 305 310 315 320
 Glu Val Gly Ala Phe Tyr Ser Ser Glu Gln Ala Glu Asn Trp Gly Ala
 325 330 335
 Gly Gly Gln Asn Phe Tyr Thr Trp Ser Val Glu Glu Ile Ser Asn Ala
 340 345 350
 Leu Gly Glu Asp Ala Glu Ile Phe Cys Asp Tyr Tyr Gly Ile Ser Arg
 355 360 365
 Glu Gly Phe Phe Asn Gly Arg Asn Ile Leu His Ile Pro Val His Arg
 370 375 380
 Glu Ile Glu Glu Leu Ser Glu Lys Tyr His Arg Ser Ile Glu Ala Ile
 385 390 395 400
 Glu Asp Ile Val Asp Arg Ser Arg Asp Ile Leu Lys Gly Ile Arg Ala
 405 410 415
 Gln Arg Ser His Arg Ser Lys Asp Asp Leu Ser Leu Thr Phe Asn Asn
 420 425 430
 Gly Trp Met Ile Tyr Thr Phe Ala Tyr Ala Gly Arg Leu Leu Gly Glu
 435 440 445
 Val Glu Tyr Ile Glu Ile Glu Lys Lys Cys Gly Glu Phe Val Arg Asn
 450 455 460
 Ser Leu Tyr Lys His His Glu Leu Tyr Arg Arg Trp Arg Glu Gly Glu
 465 470 475 480
 Ala Lys Tyr Arg Ala Ser Leu Glu Asp Tyr Gly Ala Leu Ile Leu Gly
 485 490 495
 Val Leu Ala Leu Tyr Glu Ser Gly Cys Gly Ser Phe Trp Leu Ser Phe
 500 505 510
 Ala Glu Glu Leu Met Gln Glu Val Val Leu Ser Phe Arg Ser Glu Glu
 515 520 525
 Gly Gly Phe Tyr Ser Asp Asp Gly Arg Asp Ser Thr Leu Leu Ile Lys
 530 535 540
 Gln Ser Pro Leu Ser Asp Gly Glu Thr Ile Ser Gly Asn Ala Leu Ile
 545 550 555 560
 Cys Gln Cys Leu Leu Ser Leu His Leu Ile Thr Glu Lys Lys His Tyr
 565 570 575
 Leu Thr Tyr Ala Glu Asp Ile Leu Gln Ile Ala Gln Ala Cys Ala His
 580 585 590
 Thr His Lys Phe Ser Ser Leu Gly Leu Leu Ile Ala Ser Gln Asn Tyr
 595 600 605
 Phe Ser Arg Lys His Val Lys Val Leu Ile Pro Leu Gly Asp Gln Glu
 610 615 620
 Asp Arg Ser Pro Val Leu Lys Cys Leu Ser Gly Leu Phe Leu Pro Tyr
 625 630 635 640
 Leu Ser Leu Ile Trp Met Thr Gln Glu Asn Gln Glu His Leu Glu Thr
 645 650 655
 Val Leu Pro Glu Tyr Glu His Cys Leu Ile Pro Lys Arg Gly Ile Ala
 660 665 670
 Gln Leu Arg Gln Phe Met Phe
 675

<210>1133

<211>365

<212>PRT

<213>Chlamydia pneumoniae

<400>1133

Glu Val Met Lys Leu Tyr Gln Thr Leu Arg Gly Ile Val Leu Val Ser
 1 5 10 15
 Thr Gly Cys Ile Phe Leu Gly Met His Gly Gly Tyr Ala Ala Glu Val
 20 25 30
 Pro Val Thr Ser Ser Gly Tyr Glu Asn Leu Leu Glu Ser Lys Glu Gln
 35 40 45
 Asp Pro Ser Gly Leu Ala Ile His Asp Arg Ile Leu Phe Lys Val Asp

50 55 60
 Glu Glu Asn Val Val Thr Ala Leu Asp Val Ile His Lys Leu Asn Leu
 65 70 75 80
 Leu Phe Tyr Asn Ser Tyr Pro His Leu Ile Asp Ser Phe Pro Ala Arg
 85 90 95
 Ser Gln Tyr Tyr Thr Ala Met Trp Pro Val Val Leu Glu Ser Val Ile
 100 105 110
 Asp Glu Phe Leu Met Val Ala Asp Ala Lys Ala Lys Arg Ile Ala Thr
 115 120 125
 Asp Pro Thr Ala Val Asn Gln Glu Ile Glu Glu Met Phe Gly Arg Asp
 130 135 140
 Leu Ser Pro Leu Tyr Ala His Phe Glu Met Ser Pro Asn Asp Ile Phe
 145 150 155 160
 Asn Val Ile Asp Arg Thr Leu Thr Ala Gln Arg Val Met Gly Met Met
 165 170 175
 Val Arg Ser Lys Val Met Leu Lys Val Thr Pro Gly Lys Ile Arg Glu
 180 185 190
 Tyr Tyr Arg Lys Leu Glu Glu Glu Ala Ser Arg Lys Val Ile Trp Lys
 195 200 205
 Tyr Arg Val Leu Thr Ile Lys Ala Asn Thr Glu Ser Leu Ala Ser Gln
 210 215 220
 Ile Ala Asp Lys Val Arg Ala Arg Leu Asn Glu Ala Lys Thr Trp Asp
 225 230 235 240
 Lys Asp Arg Leu Thr Ala Leu Val Ile Ser Gln Gly Gly Gln Leu Val
 245 250 255
 Cys Ser Glu Glu Phe Ser Arg Glu Asn Ser Glu Leu Ser Gln Ser His
 260 265 270
 Lys Gln Glu Leu Asp Leu Ile Gly Tyr Pro Lys Glu Leu Cys Gly Leu
 275 280 285
 Pro Lys Ala His Lys Ser Gly Tyr Lys Leu Tyr Met Leu Leu Asp Lys
 290 295 300
 Thr Ser Gly Ser Ile Glu Pro Leu Asp Val Met Glu Ser Lys Ile Lys
 305 310 315 320
 Gln His Leu Phe Ala Leu Glu Ala Glu Ser Val Glu Lys Gln Tyr Lys
 325 330 335
 Asp Arg Leu Arg Lys Arg Tyr Gly Tyr Asp Ala Ser Met Ile Ala Lys
 340 345 350
 Leu Leu Ser Glu Glu Ala Pro Pro Leu Phe Ser Leu Leu
 355 360 365

<210>1134

<211>277

<212>PRT

<213>Chlamydia pneumoniae

<400>1134

Val Thr Arg Ser Ser Pro Ala Gln Leu Ser Arg Phe Leu Ser Glu Ile
 1 5 10 15
 Gln Asn Lys Pro Lys Lys Ser Leu Ser Gln Asn Phe Leu Val Asp Gln
 20 25 30
 Asn Ile Val Lys Lys Ile Val Ala Thr Ser Glu Val Ile Pro Gln Asp
 35 40 45
 Trp Val Leu Glu Ile Gly Pro Gly Phe Gly Ala Leu Thr Glu Glu Leu
 50 55 60
 Ile Ala Ala Gly Ala Gln Val Ile Ala Ile Glu Lys Asp Pro Met Phe
 65 70 75 80
 Ala Pro Ser Leu Glu Glu Leu Pro Ile Arg Leu Glu Ile Ile Asp Ala
 85 90 95
 Cys Lys Tyr Pro Leu Asp Gln Leu Gln Glu Tyr Lys Thr Leu Gly Lys
 100 105 110
 Gly Arg Val Val Ala Asn Leu Pro Tyr His Ile Thr Thr Pro Leu Leu
 115 120 125
 Thr Lys Leu Phe Leu Glu Ala Pro Asp Phe Trp Lys Thr Val Thr Val
 130 135 140
 Met Val Gln Asp Glu Val Ala Arg Arg Ile Val Ala Gln Pro Gly Gly
 145 150 155 160

Arg Asp Tyr Gly Ser Leu Thr Ile Phe Leu Gln Phe Phe Ala Asp Ile
 165 170 175
 His Tyr Ala Phe Lys Val Ser Ala Ser Cys Phe Tyr Pro Lys Pro Gln
 180 185 190
 Val Gln Ser Ala Val Ile His Met Lys Val Lys Glu Thr Leu Pro Leu
 195 200 205
 Ser Asp Glu Glu Ile Pro Val Phe Phe Thr Leu Thr Arg Thr Ala Phe
 210 215 220
 Gln Gln Arg Arg Lys Val Leu Ala Asn Thr Leu Lys Gly Leu Tyr Pro
 225 230 235 240
 Lys Glu Gln Val Glu Gln Ala Leu Lys Glu Leu Gly Leu Leu Asn
 245 250 255
 Val Arg Pro Glu Val Leu Ser Leu Asn Asp Tyr Leu Ala Leu Phe His
 260 265 270
 Lys Met Gln Ala Gly
 275
 <210>1135
 <211>644
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1135
 Met Thr Ser Ser Ser Cys Pro Leu Leu Asp Leu Ile Leu Ser Pro Ala
 1 5 10 15
 Asp Leu Lys Lys Leu Ser Ile Ser Gln Leu Pro Gly Leu Ala Glu Glu
 20 25 30
 Ile Arg Tyr Arg Ile Ile Ser Val Leu Ser Gln Thr Gly Gly His Leu
 35 40 45
 Ser Ser Asn Leu Gly Ile Val Glu Leu Thr Ile Ala Leu His Tyr Val
 50 55 60
 Phe Ser Ser Pro Lys Asp Lys Phe Ile Phe Asp Val Gly His Gln Thr
 65 70 75 80
 Tyr Pro His Lys Leu Thr Gly Arg Asn Asn Glu Gly Phe Asp His
 85 90 95
 Ile Arg Asn Asp Asn Gly Leu Ser Gly Phe Thr Asn Pro Thr Glu Ser
 100 105 110
 Asp His Asp Leu Phe Phe Ser Gly His Ala Gly Thr Ala Leu Ser Leu
 115 120 125
 Ala Leu Gly Met Ala Gln Thr Thr Pro Leu Glu Ser Arg Thr His Val
 130 135 140
 Ile Pro Ile Leu Gly Asp Ala Ala Phe Ser Cys Gly Leu Thr Leu Glu
 145 150 155 160
 Ala Leu Asn Asn Ile Ser Thr Asp Leu Ser Lys Phe Val Val Ile Leu
 165 170 175
 Asn Asp Asn Asn Met Ser Ile Ser Lys Asn Val Gly Ala Met Ser Arg
 180 185 190
 Ile Phe Ser Arg Trp Leu His His Pro Ala Thr Asn Lys Leu Thr Lys
 195 200 205
 Gln Val Glu Lys Trp Leu Ala Lys Ile Pro Arg Tyr Gly Asp Ser Leu
 210 215 220
 Ala Lys His Ser Arg Arg Leu Ser Gln Cys Val Lys Asn Leu Phe Cys
 225 230 235 240
 Pro Thr Pro Leu Phe Glu Gln Phe Gly Leu Ala Tyr Val Gly Pro Ile
 245 250 255
 Asp Gly His Asn Val Lys Lys Leu Ile Pro Ile Leu Gln Ser Val Arg
 260 265 270
 Asn Leu Pro Phe Pro Ile Leu Val His Val Cys Thr Thr Lys Gly Lys
 275 280 285
 Gly Leu Asp Gln Ala Gln Asn Pro Ala Lys Tyr His Gly Val Arg
 290 295 300
 Ala Asn Phe Asn Lys Arg Glu Ser Ala Lys His Leu Pro Ala Ile Lys
 305 310 315 320
 Pro Lys Pro Ser Phe Pro Asp Ile Phe Gly Gln Thr Leu Cys Glu Leu
 325 330 335
 Gly Glu Val Ser Ser Arg Leu His Val Val Thr Pro Ala Met Ser Ile

340 345 350
 Gly Ser Arg Leu Glu Gly Phe Lys Gln Lys Phe Pro Glu Arg Phe Phe
 355 360 365
 Asp Val Gly Ile Ala Glu Gly His Ala Val Thr Phe Ser Ala Gly Ile
 370 375 380
 Ala Lys Ala Gly Asn Pro Val Ile Cys Ser Ile Tyr Ser Thr Phe Leu
 385 390 395 400
 His Arg Ala Leu Asp Asn Val Phe His Asp Val Cys Met Gln Asp Leu
 405 410 415
 Pro Val Ile Phe Ala Ile Asp Arg Ala Gly Leu Ala Tyr Gly Asp Gly
 420 425 430
 Arg Ser His His Gly Ile Tyr Asp Met Ser Phe Leu Arg Ala Met Pro
 435 440 445
 Gln Met Ile Ile Cys Gln Pro Arg Ser Gln Val Val Phe Gln Gln Leu
 450 455 460
 Leu Tyr Ser Ser Leu His Trp Ser Ser Pro Ser Ala Ile Arg Tyr Pro
 465 470 475 480
 Asn Ile Pro Ala Pro His Gly Asp Pro Leu Thr Gly Asp Pro Asn Phe
 485 490 495
 Leu Arg Ser Pro Gly Asn Ala Glu Thr Leu Ser Gln Gly Glu Asp Val
 500 505 510
 Leu Ile Ile Ala Leu Gly Thr Leu Cys Phe Thr Ala Leu Ser Ile Lys
 515 520 525
 His Gln Leu Leu Ala Tyr Gly Ile Ser Ala Thr Val Val Asp Pro Ile
 530 535 540
 Phe Ile Lys Pro Phe Asp Asn Asp Leu Phe Ser Leu Leu Leu Met Ser
 545 550 555 560
 His Ser Lys Val Ile Thr Ile Glu Glu His Ser Ile Arg Gly Gly Leu
 565 570 575
 Ala Ser Glu Phe Asn Asn Phe Val Ala Thr Phe Asn Phe Lys Val Asp
 580 585 590
 Ile Leu Asn Phe Ala Ile Pro Asp Thr Phe Leu Ser His Gly Ser Lys
 595 600 605
 Glu Ala Leu Thr Lys Ser Ile Gly Leu Asp Glu Ser Ser Met Thr Asn
 610 615 620
 Arg Ile Leu Thr His Phe Asn Phe Arg Ser Lys Lys Gln Thr Val Gly
 625 630 635 640
 Asp Val Arg Val

<210>1136

<211>127

<212>PRT

<213>Chlamydia pneumoniae

<400>1136

Ala Ser Pro Ala Arg Ser Ile Ala Lys Ile Thr Gly Arg Ser Cys Met
 1 5 10 15
 Gln Thr Ser Trp Lys Thr Leu Ser Arg Ala Arg Cys Lys Asn Val Glu
 20 25 30
 Tyr Ile Glu Gln Ile Thr Gly Leu Pro Ala Phe Ala Met Pro Ala Leu
 35 40 45
 Lys Val Thr Ala Trp Pro Ser Ala Ile Pro Thr Ser Lys Lys Arg Ser
 50 55 60
 Gly Asn Phe Cys Leu Lys Pro Ser Lys Arg Asp Pro Ile Asp Ile Ala
 65 70 75 80
 Gly Val Thr Thr Trp Arg Arg Glu Glu Thr Ser Pro Ser Ser His Ser
 85 90 95
 Val Trp Pro Asn Ile Ser Gly Lys Glu Gly Leu Gly Leu Ile Ala Gly
 100 105 110
 Arg Cys Phe Ala Asp Ser Arg Leu Leu Lys Phe Ala Leu Thr Pro
 115 120 125

<210>1137

<211>554

<212>PRT

<213>Chlamydia pneumoniae

<400>1137

Met Ser Ser Pro Pro Gln Ala Val Ala Ser Leu Thr Glu Arg Ile Lys
 1 5 10 15
 Thr Leu Leu Glu Ser Asn Phe Cys Gln Ile Ile Val Lys Gly Glu Leu
 20 25 30
 Ser Asn Val Ser Leu Gln Pro Ser Gly His Leu Tyr Phe Gly Ile Lys
 35 40 45
 Asp Ser Gln Ala Phe Leu Asn Gly Ala Phe Phe His Phe Lys Ser Lys
 50 55 60
 Tyr Tyr Asp Arg Lys Pro Lys Asp Gly Asp Ala Val Ile Ile His Gly
 65 70 75 80
 Lys Leu Ala Val Tyr Ala Pro Arg Gly Gln Tyr Gln Ile Val Ala His
 85 90 95
 Ala Leu Val Tyr Ala Gly Glu Gly Asp Leu Leu Gln Lys Phe Glu Glu
 100 105 110
 Thr Lys Arg Arg Leu Thr Ala Glu Gly Tyr Phe Ala Thr Glu Lys Lys
 115 120 125
 Lys Pro Leu Pro Phe Ala Pro Gln Cys Ile Gly Val Ile Thr Ser Pro
 130 135 140
 Thr Gly Ala Val Ile Gln Asp Ile Leu Arg Val Leu Ser Arg Arg Ala
 145 150 155 160
 Arg Asn Tyr Lys Ile Leu Val Tyr Pro Val Thr Val Gln Gly Asn Ser
 165 170 175
 Ala Ala His Glu Ile Ser Lys Ala Ile Glu Val Met Asn Ala Glu Asn
 180 185 190
 Leu Ala Asp Val Leu Ile Ile Ala Arg Gly Gly Gly Ser Ile Glu Asp
 195 200 205
 Leu Trp Ala Phe Asn Glu Glu Ile Leu Val Lys Ala Ile His Ala Ser
 210 215 220
 Thr Ile Pro Ile Val Ser Ala Val Gly His Glu Thr Asp Tyr Thr Leu
 225 230 235 240
 Cys Asp Phe Ala Ser Asp Val Arg Ala Pro Thr Pro Ser Ala Ala Ala
 245 250 255
 Glu Ile Val Cys Lys Ser Ser Glu Glu Gln Val Gln Val Phe Glu Gly
 260 265 270
 Tyr Leu Arg His Leu Leu Ser His Ser Arg Gln Leu Leu Thr Ser Lys
 275 280 285
 Lys Gln Gln Leu Leu Pro Trp Arg Arg Phe Leu Asp Arg Ala Glu Phe
 290 295 300
 Tyr Thr Thr Ala Gln Gln Gln Leu Asp Ser Ile Glu Ile Ala Ile Gln
 305 310 315 320
 Lys Gly Val Gln Gly Lys Ile His Glu Ser Lys Gln Arg Tyr Asp Asn
 325 330 335
 Ile Ser Arg Trp Leu Gln Gly Asp Leu Val Ser Arg Met Thr Cys Arg
 340 345 350
 Leu Gln Ser Leu Lys Lys Met Leu Ser Gln Ala Leu Ser His Lys Ala
 355 360 365
 Leu Ser Leu Gln Val Arg Cys His Gln Leu Lys Lys Ser Leu Thr Tyr
 370 375 380
 Pro Arg Gln Ile Gln Gln Ala Ser Gln Lys Leu Ser Pro Trp Arg Gln
 385 390 395 400
 Gln Leu Asp Thr Leu Ile Ser Arg Arg Leu His Tyr Gln Lys Glu Glu
 405 410 415
 Tyr Phe His Lys His Thr Arg Leu Lys His Ala His Asn Val Leu Glu
 420 425 430
 Gln Gln Leu Arg Ser His Val Gln Lys Leu Glu Leu Leu Gly Arg Arg
 435 440 445
 Leu Ser Arg Gly Cys Glu Leu Asn Leu Gln Asn Gln Lys Ile Ala Tyr
 450 455 460
 Ala Asn Val Lys Glu Thr Leu Ala Thr Ile Leu Glu Arg Arg Tyr Glu
 465 470 475 480
 Asn Ser Val Ala Arg Tyr Ser Ala Leu Lys Glu Gln Leu His Ser Leu
 485 490 495
 Asn Pro Lys Asn Val Leu Lys Arg Gly Tyr Ala Met Leu Phe Asp Phe

500 505 510
 Asn Glu Asn Ser Ala Met Ile Ser Val Asp Ser Leu Gln Glu Asn Ala
 515 520 525
 Arg Val Arg Ile Gln Leu Gln Asp Gly Glu Ala Ile Leu Thr Val Thr
 530 535 540
 Asn Ile Glu Ile Cys Lys Leu Ile Lys Gly
 545 550
 <210>1138
 <211>184
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1138
 Met Thr Tyr Ala Gln Val Glu Val Leu Met Ala Thr Pro Asp Ile Ser
 1 5 10 15
 Lys Tyr His Gly Leu Arg Asp Arg Cys Leu Met Glu Leu Phe Tyr Ser
 20 25 30
 Ser Gly Leu Arg Ile Ser Glu Ile Val Ala Val Asn Lys Gln Asp Phe
 35 40 45
 Asp Leu Ser Thr His Leu Ile Arg Ile Arg Gly Lys Gly Lys Lys Glu
 50 55 60
 Arg Ile Ile Pro Val Thr Ser Asn Ala Ile Gln Trp Ile Gln Ile Tyr
 65 70 75 80
 Leu Asn His Pro Asp Arg Lys Arg Leu Glu Lys Asp Pro Gln Ala Ile
 85 90 95
 Phe Leu Asn Arg Phe Gly Arg Arg Ile Ser Thr Arg Ser Ile Asp Arg
 100 105 110
 Ser Phe Gln Glu Tyr Leu Arg Arg Ser Gly Leu Ser Gly His Ile Thr
 115 120 125
 Pro His Thr Ile Arg His Thr Ile Ala Thr His Trp Leu Glu Ser Gly
 130 135 140
 Met Asp Leu Lys Thr Ile Gln Ala Leu Leu Gly His Ser Ser Leu Glu
 145 150 155 160
 Thr Thr Thr Val Tyr Thr Gln Val Ser Val Lys Leu Lys Lys Gln Thr
 165 170 175
 His Gln Glu Ala His Pro His Ala
 180

<210>1139

<211>288

<212>PRT

<213>Chlamydia pneumoniae

<400>1139

Met Ser His Leu Ile Pro Ser Leu Arg Asn Ser Val Thr Ser Tyr Phe
 1 5 10 15
 His Lys Pro Gln Pro Ile Lys Gln Ala Ala Pro Ser Lys Ser Ile Arg
 20 25 30
 Asp Ile Cys Asn Ile Ala Tyr Leu Ile Ile Ile Cys Val Leu Val Val
 35 40 45
 Val Val Leu Val Gly Ala Met Leu Cys Met Phe Ile Pro Ser Val Gly
 50 55 60
 Ile Pro Leu Cys Leu Ser Ser Leu Ala Leu Leu Val Leu Leu Ser Ile
 65 70 75 80
 Phe Asn Pro Cys Leu Ile Asn Trp Ile Ser Thr Lys Lys Thr Lys Glu
 85 90 95
 Ile Ala Pro Lys Asp Ala Ser Glu Ser Gln Pro Thr Lys Ser Ala Ser
 100 105 110
 Arg Lys Gly Ser Pro Gln Leu Ser Pro His His Asp His Glu Pro Lys
 115 120 125
 Asn Phe Ile Arg Thr Gln Leu Glu Lys Gly Val Asn Tyr Val Thr Asn
 130 135 140
 Lys Phe Lys Ser Gly Glu Glu Ser Pro His Ile Ser Asp Glu His His
 145 150 155 160
 Ser Pro Arg Gln Ser Lys Arg Ser Ser Glu Ile Glu Ser Ser Asp Glu
 165 170 175
 Ser Ser Pro Glu Leu His Arg Lys Ala Lys Gly Lys Ala Pro His Thr

180 185 190
 Ala Thr Thr Lys Gly Ser Lys Thr Ser Thr Thr Glu Ser Ser Lys Lys
 195 200 205
 Lys Lys Lys Thr Lys His Ser Leu His Arg Thr Thr Ser Ser Ile His
 210 215 220
 Lys Arg Ser Ala Pro Lys Pro Met Val Pro Ser Lys Lys Arg Lys Pro
 225 230 235 240
 Val Leu Leu Lys Lys Thr Val Pro Leu Pro Ile Glu Asp Leu Glu His
 245 250 255
 Gln Ser Ser Gly Asn Glu Ser Ser Asp Ser Ser Ser Pro Pro Val
 260 265 270
 Gln Arg Lys Ala Ile Leu Pro Trp Phe Cys Lys Gln Pro Thr Asp Pro
 275 280 285

<210>1140

<211>153

<212>PRT

<213>Chlamydia pneumoniae

<400>1140

Met Leu Arg Arg Arg Ile Trp Lys Lys Thr Leu Thr Pro Asp Gln Glu
 1 5 10 15
 Asn Leu Ser Leu Pro Leu Pro Ser Pro Thr Thr Leu Lys Lys Ile His
 20 25 30
 Ala Leu His Ile Leu Val Arg Ser Gly Lys Thr Tyr Asn Glu Leu Ile
 35 40 45
 Gln Glu Gly Phe Ser Phe Thr Lys Ile Thr Asp Leu Gly Gln Ala Pro
 50 55 60
 Ser Pro Lys Gln Asp Ile Gly Phe Ser Tyr Asn Ser Leu Leu Pro Asn
 65 70 75 80
 Phe Tyr Phe His Ser Leu Val Ser Val Pro Asn Ile Ser Gly Glu Glu
 85 90 95
 Arg Ala Leu Asn Tyr His Lys Glu Gln Gln Glu Glu Met Ala Val Lys
 100 105 110
 Leu Lys Thr Met Gln Ala Cys Ser Phe Val Phe Arg Ser Leu His Leu
 115 120 125
 Pro Ser Met Gln Thr Lys Asp Lys Lys Ala Gly Phe Gly Leu Leu Thr
 130 135 140
 Phe Phe Pro Trp Lys Ile Tyr Pro Leu
 145 150

<210>1141

<211>136

<212>PRT

<213>Chlamydia pneumoniae

<400>1141

Leu Ala Met Ala Lys Asn Val Pro Leu Leu Gly Tyr Ser Ser Leu Glu
 1 5 10 15
 Gly Tyr Leu Leu Ser Lys Asp Glu Lys Lys Ala Leu Met Leu Pro Leu
 20 25 30
 Gly Lys Arg Gly Gly Val Leu Thr Leu Ser Ser Glu Ile Pro Glu Glu
 35 40 45
 Gly Leu Asn Glu Lys Arg Arg Gly Val Gly Pro Gly Ala Leu Leu Ser
 50 55 60
 Tyr Glu Glu Ala Ser Asp Tyr Cys Val Ala His Gly Tyr Tyr His Val
 65 70 75 80
 Ile Ser Pro Asn Pro Gln Leu Phe Ala Ser Ser Phe Ser Asp Lys Ile
 85 90 95
 Thr Val Glu Glu Val Ala Pro Ser Val Glu Gln Ile Arg Arg His Val
 100 105 110
 Ile Ser Gln Phe Met Phe Val Glu Tyr Asp Lys Gln Leu Ser Pro Asp
 115 120 125
 Tyr Arg Ser Tyr Ser Cys Ile Phe
 130 135

<210>1142

<211>82

<212>PRT

<213>Chlamydia pneumoniae

<400>1142

Met Ile Glu Phe Pro Ser Ala Val Trp Met Ile Glu Glu Ile Leu Pro
 1 5 10 15
 Glu Cys Asp Phe Leu Ser Ile Gly Thr Asn Asp Leu Val Gln Tyr Thr
 20 25 30
 Leu Gly Ile Ser Arg Glu Ser Ala Leu Pro Lys His Leu Asn Val Thr
 35 40 45
 Leu Pro Pro Ala Val Ile Arg Met Ile His His Val Leu Gln Ala Ala
 50 55 60
 Asn Lys Ile Arg Phe Leu Leu Ala Phe Val Glu Arg Pro Gln Gly Ser
 65 70 75 80
 Ser Val

<210>1143

<211>108

<212>PRT

<213>Chlamydia pneumoniae

<400>1143

Leu Phe Asp Ala Leu His Ile Ser Leu His Arg Asn Ile Pro Arg Met
 1 5 10 15
 Gly Asn His Glu Thr Tyr Ile His Pro Gly Val Leu Pro Ser Ser His
 20 25 30
 Ala Gln Asp Val Ser Arg Ser Thr Val Tyr Pro Ser Arg Ser Phe Ile
 35 40 45
 Met Arg Arg Met Leu Met Gly Trp Asn Phe Asn Arg Val Pro Ser Lys
 50 55 60
 Ser Ser Glu Gln Leu Met Asp Gly His Arg Ile Pro Leu Ile Phe Phe
 65 70 75 80
 Gly Lys His His Pro Thr Ile Ser Ile Leu Asn Val Asn Arg Phe Ser
 85 90 95
 Trp Leu Ser Ile Phe Tyr Asn Gly Glu Arg Gly Phe
 100 105

<210>1144

<211>141

<212>PRT

<213>Chlamydia pneumoniae

<400>1144

Met Ala Thr Lys Thr Lys Thr Gln Trp Thr Cys Asn Gln Cys Gly Ala
 1 5 10 15
 Thr Ala Pro Lys Trp Leu Gly Gln Cys Pro Gly Cys His Asn Trp Asn
 20 25 30
 Ser Leu Val Glu Glu Tyr Val Pro Gln Ala Arg Ser Gly Thr Ser Ser
 35 40 45
 Arg Ser Ser Thr Ser Ala Ile Ala Leu Ser Ser Ile Glu Leu Glu Asn
 50 55 60
 Glu Ser Arg Ile Phe Ile Asp His Ala Gly Trp Asp Arg Ile Leu Gly
 65 70 75 80
 Gly Gly Val Val Arg Gly Ser Leu Thr Leu Leu Gly Gly Asp Pro Gly
 85 90 95
 Ile Gly Lys Ser Thr Leu Leu Leu Gln Thr Ala Glu Arg Leu Ala Ser
 100 105 110
 Gln Lys Tyr Lys Val Leu Tyr Val Cys Gly Glu Glu Ser Val Thr Gln
 115 120 125
 Thr Ser Leu Arg Ala Lys Arg Ser Ile Ser His His Leu
 130 135 140

<210>1145

<211>77

<212>PRT

<213>Chlamydia pneumoniae

<400>1145

Met Thr Lys Ile Gln Cys Ser Ala Gln Tyr Tyr Arg Ser Arg Pro Ala
 1 5 10 15
 Glu Arg Ala Gln Thr Pro Pro Gln Pro Phe Leu Ala Arg Asp Arg Ala

20 25 30
 Asp Phe Trp Glu Arg His Pro Arg Phe Ser Ala Cys Cys Arg Val Leu
 35 40 45
 Leu Leu Val Ala Trp Val Val Leu Ala Leu Leu Phe Leu Phe Val Met
 50 55 60
 Leu Leu Pro Leu Ala Ala Gly Ser Tyr Leu Leu Ala Phe
 65 70 75
 <210>1146
 <211>121
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1146
 Leu Thr Tyr Thr Arg Val Asn Asp Gly His Leu Ala Pro Phe Arg Ala
 1 5 10 15
 Gly Ala Lys Trp Ile Leu Ile His Tyr Val Arg Leu Arg Arg Gln His
 20 25 30
 Asn Gln Asn Asp Phe Phe Thr Pro Gly His Ser Cys Tyr Tyr Ala Arg
 35 40 45
 Leu Ala Phe Asn Gln Thr Gln Arg Leu Tyr His Gln Leu Phe Asn Val
 50 55 60
 Glu Lys Leu Arg Ser Ile Tyr Ala Asn Met Asp Lys Asp Pro Leu Cys
 65 70 75 80
 His Pro Trp Ala Xaa Ile Pro Ile Tyr Asp Leu Leu Lys Thr Glu Asp
 85 90 95
 His Gly Asp Gly Phe Leu Glu Gln Gln Glu Asp Arg Glu Tyr Pro Ser
 100 105 110
 Arg Ala Ala Gln Asp Gln Phe Trp Gly
 115 120
 <210>1147
 <211>170
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1147
 Val Ser Ala Glu Phe Lys Leu Met Leu Asp Leu Arg Gln Tyr Met Gly
 1 5 10 15
 Ser Val Met Gln Arg Leu Gly Leu Ser Asn Leu Phe His Cys Leu Leu
 20 25 30
 Leu Phe Leu Arg Tyr Tyr Tyr Ser Lys Leu Val Phe Gly Leu Thr Val
 35 40 45
 Leu Leu Ala Ala Ile Ser Val Ile Cys Leu Leu Gly Cys Ser Glu Pro
 50 55 60
 Ser Leu Ser Ser Phe Thr Glu Tyr Val Gly Pro Glu Tyr Ser Ala Ala
 65 70 75 80
 Ala Gln Leu Ser Ile Glu Gln Ser Cys His Asp Glu Val Tyr Gly Gln
 85 90 95
 Gln Val Val Val Thr Trp Ser Leu Pro Ser Arg Met Arg Lys Cys Leu
 100 105 110
 Pro Val Thr Leu Tyr Leu Trp Val Tyr Tyr Gly Asn Gly Lys Val Glu
 115 120 125
 Lys Leu Thr Tyr Glu Val Asn Gln Ser Ala Gly Tyr Arg Val Tyr Cys
 130 135 140
 Leu Lys Gly Leu Glu Tyr Lys Glu Leu Gln Gly Ile Ile Ser Tyr Pro
 145 150 155 160
 Leu Arg Tyr Val Ala Gly Ile Lys Arg Leu
 165 170
 <210>1148
 <211>101
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1148
 Met Val Ser Pro Leu Ser Leu Phe His Lys Met Leu Leu Glu Asn Trp
 1 5 10 15
 Thr Pro Val Glu Glu Pro Phe Pro Trp Pro Pro Ala Glu Lys Asn Gln
 20 25 30

Lys Ile Phe Ala Trp Ala Leu Asn Gln Ser Lys Leu Ile Phe Val Ser
 35 40 45
 Thr Ser Gly Asn Ile Ala Gln Pro Arg Leu Val Thr Asp Ser Met Ser
 50 55 60
 Met Met Ile Val Asn Ala Ala Asn Arg Thr Met Ser Arg Asp Gly Ala
 65 70 75 80
 Gly Thr Asn Gln Val Leu Ser Ala Ala Val Ser Val Asp Ser Trp Gly
 85 90 95
 Cys Arg Asn Asp Leu
 100

<210>1149

<211>119

<212>PRT

<213>Chlamydia pneumoniae

<400>1149

Val Ala Leu Lys Ile Arg Leu Arg Gln Gln Gly Arg Arg Asn His Val
 1 5 10 15
 Val Tyr Arg Leu Val Leu Ala Asp Val Glu Ser Pro Arg Asp Gly Lys
 20 25 30
 Tyr Ile Glu Leu Leu Gly Trp Tyr Asp Pro His Ser Ser Ile Asn Tyr
 35 40 45
 Gln Leu Lys Ser Glu Arg Ile Phe Tyr Trp Leu Glu Arg Gly Ala Gln
 50 55 60
 Leu Ser Ser Lys Ala Glu Ala Leu Val Lys Gln Gly Ala Pro Gly Val
 65 70 75 80
 Tyr Ser Ala Leu Leu Ser Lys Gln Glu Ala Arg Lys Leu Val Val Arg
 85 90 95
 Lys Lys Arg Arg Ala Tyr Arg Gln Arg Arg Ser Thr Gln Arg Glu Glu
 100 105 110
 Ala Ala Lys Asp Ala Thr Lys
 115

<210>1150

<211>170

<212>PRT

<213>Chlamydia pneumoniae

<400>1150

Met Ser Glu Val Lys Pro Leu Phe Leu Lys Asn Asp Ser Phe Asp Leu
 1 5 10 15
 Ala Thr Gln Arg Phe Gln Asn Leu Ile Asn Met Leu Gln Glu Gln Ala
 20 25 30
 Glu Ile Tyr Asn Glu Tyr Glu Glu Lys Asn Ala Arg Val Gln Asn Glu
 35 40 45
 Ile Lys Glu Gln Lys Asp Phe Val Lys Arg Cys Ile Glu Asp Phe Glu
 50 55 60
 Ala Arg Gly Leu Gly Val Leu Lys Glu Glu Leu Ala Ser Leu Thr Arg
 65 70 75 80
 Asp Phe His Asp Lys Ala Lys Ala Glu Thr Ser Met Leu Ile Glu Cys
 85 90 95
 Pro Cys Ile Gly Phe Tyr Tyr Ser Ile His Gln Glu Glu Gln Arg Gln
 100 105 110
 Arg Gln Glu Arg Leu Gln Lys Met Ala Glu Arg Tyr Arg Asp Cys Lys
 115 120 125
 Gln Val Leu Glu Ala Val Gln Val Glu Gln Lys Asp Met Ile Ser Ser
 130 135 140
 Arg Val Val Val Asp Asp Ser Tyr Phe Glu Glu Glu Lys Glu Glu Gln
 145 150 155 160
 Lys Val Asp Asn Arg Lys Lys Glu Gln Asp
 165 170

<210>1151

<211>90

<212>PRT

<213>Chlamydia pneumoniae

<400>1151

Leu Val Phe Ser Tyr Tyr Cys Met Gly Leu Phe Phe Phe Ser Gly Ala

1 5 10 15
 Ile Ser Ser Cys Gly Leu Leu Val Ser Leu Gly Val Gly Leu Gly Leu
 20 25 30
 Ser Val Leu Gly Val Leu Leu Leu Leu Ala Gly Leu Leu Leu Phe
 35 40 45
 Lys Ile Gln Ser Met Leu Arg Glu Val Pro Lys Ala Pro Asp Leu Leu
 50 55 60
 Asp Leu Glu Asp Ala Ser Glu Arg Leu Arg Val Lys Ala Ser Arg Ser
 65 70 75 80
 Leu Ala Ser Leu Pro Lys Lys Ser Val Ser
 85 90
 <210>1152
 <211>94
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1152
 Leu Leu Leu Cys Ser Ala Met Gly Ile Phe Ser Ser Ala Lys Ala Leu
 1 5 10 15
 Ile Ala Trp Asn Lys Ala Ser Leu Asn Leu Ser Pro Ala Leu Leu Gly
 20 25 30
 Ala Ile Leu Ile Phe Glu Pro Ile Phe Gly Leu Val Leu Thr Tyr Leu
 35 40 45
 Tyr Ser Gln Ser Leu Pro Ser Leu Gln Glu Gly Ile Gly Ile Phe Leu
 50 55 60
 Met Leu Gly Gly Ser Leu Leu Cys Leu Val Leu Phe Gly Arg Lys Val
 65 70 75 80
 Gln Lys Ser Leu Glu Asn Ser Gln Val Ser Ser Ser Asn Glu
 85 90
 <210>1153
 <211>248
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1153
 Met Phe Pro Ser Ala Asn Gln Glu Ser Arg Thr Arg Asn Val Pro Leu
 1 5 10 15
 Gly Ile Phe His Gly Leu Val Ala Cys Leu Tyr Trp Gly Ile Val Phe
 20 25 30
 Val Ile Pro Asn Phe Leu Gly Ser Phe Gly Asp Leu Asp Ile Val Leu
 35 40 45
 Thr Arg Tyr Thr Ile Phe Gly Ile Phe Ser Leu Ile Ala Cys Ala Ile
 50 55 60
 Lys Asn Pro Ser Val Ile Lys Lys Thr Pro Leu Tyr Ile Trp Arg Lys
 65 70 75 80
 Ser Leu Leu Trp Thr Leu Leu Ile Asn Pro Val Tyr Tyr Phe Gly Ile
 85 90 95
 Thr Leu Gly Ile Arg Tyr Val Gly Ser Ala Ile Thr Val Val Ile Ala
 100 105 110
 Ser Leu Ala Pro Thr Ala Val Leu Tyr His Ser Asn Thr Lys Gln Lys
 115 120 125
 Glu Leu Pro Tyr Ser Leu Leu Phe Ala Ile Ser Ser Val Ile Ile Thr
 130 135 140
 Gly Val Ile Leu Thr His Leu Ser Ala Leu Asn Leu Pro Thr Ala Ala
 145 150 155 160
 Ser Pro Leu Tyr Ser Ile Leu Gly Val Ile Ala Val Ile Leu Ser Thr
 165 170 175
 Ser Leu Trp Val Ile Tyr Val Ile Arg Asn Gln Ser Leu Leu Glu Lys
 180 185 190
 His Pro Xaa Leu Thr Pro Asp Tyr Leu Glu Leu Pro His Arg Asn Gln
 195 200 205
 Arg Phe Asp His Leu Pro Pro Tyr Asp Tyr Tyr Ser Arg Ser Leu Trp
 210 215 220
 Asn Tyr Pro Arg Asn Thr Gln Ser Tyr Leu Ala Tyr Thr Gly Ile Arg
 225 230 235 240
 Ala Thr Ala Leu Leu Val Ala Met

245

<210>1154

<211>149

<212>PRT

<213>Chlamydia pneumoniae

<400>1154

Met Ala Val Gln Ser Ile Lys Glu Ala Val Thr Ser Ala Ala Thr Ser
 1 5 10 15
 Val Gly Cys Val Asn Cys Ser Arg Glu Ala Ile Pro Ala Phe Asn Thr
 20 25 30
 Glu Glu Arg Ala Thr Ser Ile Ala Arg Ser Val Ile Ala Ala Ile Ile
 35 40 45
 Ala Val Val Ala Ile Ser Leu Leu Gly Leu Gly Leu Val Val Leu Ala
 50 55 60
 Gly Cys Cys Pro Leu Gly Met Ala Ala Gly Ala Ile Thr Met Leu Leu
 65 70 75 80
 Gly Val Ala Leu Leu Ala Trp Ala Ile Leu Ile Thr Leu Arg Leu Leu
 85 90 95
 Asn Ile Pro Lys Ala Glu Ile Pro Ser Pro Gly Asn Asn Gly Glu Pro
 100 105 110
 Asn Glu Arg Asn Ser Ala Thr Pro Pro Leu Glu Gly Gly Val Ala Gly
 115 120 125
 Glu Ala Gly Arg Gly Gly Gly Ser Pro Leu Thr Gln Leu Asp Leu Asn
 130 135 140
 Ser Gly Ala Gly Ser
 145

<210>1155

<211>124

<212>PRT

<213>Chlamydia pneumoniae

<400>1155

Met Gly Asn Ser Cys Phe Trp Arg Gly Gly Leu Leu Arg Tyr Pro Cys
 1 5 10 15
 Gly Glu Glu Ile Glu Lys Ser Arg Ala Asn Phe Phe Thr Ala Asp Thr
 20 25 30
 Thr Thr Val Met Ser Tyr Pro Pro Asn Pro Tyr Gly Leu Tyr Asp Met
 35 40 45
 Ala Gly Asn Val Tyr Glu Trp Cys Gln Asp Trp Tyr Gly Tyr Asp Phe
 50 55 60
 Tyr Glu Ile Ser Ala Gln Glu Pro Glu Ser Pro Gln Gly Pro Ala Gln
 65 70 75 80
 Gly Val Tyr Arg Val Leu Arg Gly Gly Cys Trp Lys Ser Leu Lys Asp
 85 90 95
 Asp Leu Arg Cys Ala His Arg His Arg Asn Asn Pro Gly Ala Val Asn
 100 105 110
 Ser Thr Tyr Gly Phe Arg Cys Ala Lys Asn Ile Asn
 115 120

<210>1156

<211>181

<212>PRT

<213>Chlamydia pneumoniae

<400>1156

Lys Leu Lys Leu Leu Lys Ala Ser Phe Ile Lys Leu Leu Leu Thr Leu
 1 5 10 15
 Asp Trp Pro Thr Glu Leu Leu Leu Lys Asn Arg Pro Phe Asp Phe Thr
 20 25 30
 Gly His Pro Glu Glu Glu Lys Leu Ile Lys Asp Ile Leu Leu Lys Glu
 35 40 45
 Glu Gly Asn Lys Tyr Phe Ser Leu Glu Ser Lys Lys Leu Leu Ala Arg
 50 55 60
 His Met Met His Asn Ile Val Val Leu Ser Glu Glu Pro Gly Arg Ser
 65 70 75 80
 Ala Phe Leu Gly Arg Thr Ala Phe Phe Pro Asn Lys Tyr Pro Ile Ala
 85 90 95

Gln Gly Gly Val Gly Ile Pro Ser Thr Ile Gly Asn Leu Phe Thr Ile
 100 105 110
 Trp Tyr Cys Phe Tyr Phe Tyr Arg Ala Ala Thr Pro Gln Ser Asp His
 115 120 125
 Pro Asp Gly Cys Gly Phe Ile Leu Leu Glu Arg Leu Lys Glu Leu Gly
 130 135 140
 Ala Gly Phe Phe Tyr Cys Asp Leu Arg Glu Ser Asn Thr Thr Gly Phe
 145 150 155 160
 Thr Leu Phe Phe Glu Gly Ser Asn Lys Gly Val Leu Lys Asn His Leu
 165 170 175
 Phe Ile Arg Asp Glu
 180

<210>1157

<211>131

<212>PRT

<213>Chlamydia pneumoniae

<400>1157

Met Asn Ile Tyr Gln Phe Ser Pro Gly Ala Ser Pro Asn Trp Gln Ala
 1 5 10 15
 Ser Leu Met Ala Gln Leu Asn Ser Tyr Phe Cys Leu Gly Gly Glu Thr
 20 25 30
 Val Thr Arg Ile Ile Ser Leu Arg Pro Ser Gly Leu Ile Leu Ala Lys
 35 40 45
 Lys Glu Lys Ala Val Val Ser Thr Ala Glu Lys Ile Leu Lys Ile Leu
 50 55 60
 Ser Phe Ile Leu Phe Pro Leu Val Leu Ile Ala Leu Ala Ile Arg Tyr
 65 70 75 80
 Leu Leu Tyr Asn Lys Phe Asn Lys Asp Leu Asp Arg Ala Val Phe Phe
 85 90 95
 Ile Pro Thr Glu Ile Thr Lys Ala Glu Leu Ile Ile Ala Lys Asn
 100 105 110
 Ser Cys Ala Ser Glu Arg Ser Gly Ser Asn Cys Phe Ser Ala Leu Leu
 115 120 125
 Phe Ser Ser
 130

<210>1158

<211>111

<212>PRT

<213>Chlamydia pneumoniae

<400>1158

Met Leu Gln His Leu Phe Ile Asp Gly Ile Thr Gln Glu Asn Pro Glu
 1 5 10 15
 Ala Leu Pro Asn Asn Thr Ser Gly Arg Leu Thr Leu Phe Pro Ser Val
 20 25 30
 Arg Tyr Ile Tyr Ser His Phe Thr Pro Gln Asn Pro Thr Ile Trp Pro
 35 40 45
 Gln Val Phe Phe Arg Gln Gly Pro Leu Asp Glu Asp Arg Gly Gly Gly
 50 55 60
 Phe Glu Ile Leu Glu Gln Leu Gln Glu Leu Gly Val Arg Phe Pro Ile
 65 70 75 80
 Cys Pro Ser Gln Gly Pro Asp Asn Pro Asn Phe Gln Gly Phe Gln Gly
 85 90 95
 Ile Arg Ile Tyr Trp Glu Asp Ser Tyr Gln Pro Asn Lys Glu Val
 100 105 110

<210>1159

<211>111

<212>PRT

<213>Chlamydia pneumoniae

<400>1159

Met Ser Glu Ser Ile Asn Arg Ser Ile His Leu Glu Ala Ser Thr Pro
 1 5 10 15
 Phe Phe Ile Lys Leu Thr Asn Leu Cys Glu Ser Arg Leu Val Lys Ile
 20 25 30
 Thr Ser Leu Val Ile Ser Leu Leu Ala Leu Val Gly Ala Gly Val Thr

35 40 45
 Leu Val Val Leu Phe Val Ala Gly Ile Leu Pro Leu Leu Pro Val Leu
 50 55 60
 Ile Leu Glu Ile Ile Leu Ile Thr Val Leu Val Leu Leu Phe Cys Leu
 65 70 75 80
 Val Leu Glu Pro Tyr Leu Ile Glu Lys Pro Ser Lys Ile Lys Glu Leu
 85 90 95
 Pro Lys Val Asp Glu Leu Ser Val Val Glu Thr Asp Ser Thr Leu
 100 105 110

<210>1160

<211>75

<212>PRT

<213>Chlamydia pneumoniae

<400>1160

Leu Ala Phe Asn Glu Ser Val Arg Ile Tyr Arg Lys Leu Phe Asn Thr
 1 5 10 15
 Ala Glu Leu Lys Gln Met Tyr Gly Ala Gly Asp Tyr Glu Gln Asn
 20 25 30
 Glu Asp Asn Leu Lys Ser Ile Leu Ser Phe Val Gln Ile Leu Asp Glu
 35 40 45
 Lys Asp Gly Phe Asp Asp Phe Leu Ala Thr His Lys Asp Thr Thr Phe
 50 55 60
 Ile Gly Arg Gly Gly Ala Asp Ile Phe Cys Ser
 65 70 75

<210>1161

<211>87

<212>PRT

<213>Chlamydia pneumoniae

<400>1161

Met Glu Glu Ala Leu Thr Phe Asp Asp Val Leu Leu Ile Pro Gln Tyr
 1 5 10 15
 Ser Glu Ile Leu Pro Ser Glu Val Ser Leu Lys Thr Ala Ile Ser Lys
 20 25 30
 Thr Leu Ser Leu Asn Ile Pro Ile Leu Ser Ala Ala Met Asp Ser Val
 35 40 45
 Thr Glu Thr Ala Met Ala Leu Ala Leu Ala Gln Glu Gly Gly Leu Gly
 50 55 60
 Ile Leu His Lys Asn Met Ser Glu Val Glu Gln Ser Ser Ser Val Arg
 65 70 75 80
 Lys Ile Lys Glu Ala Tyr Pro
 85

<210>1162

<211>91

<212>PRT

<213>Chlamydia pneumoniae

<400>1162

Met Asp Phe Ser Val Phe Pro Asp Arg Phe Val Glu Ser Thr Ser Pro
 1 5 10 15
 Ser Pro Ile Glu Asp Ile Asp Ala Lys Thr Leu Val Ser Asn Cys Cys
 20 25 30
 His Tyr Cys Ser Arg Cys Leu Phe Ile Phe Leu Ser Leu Leu Ser Ile
 35 40 45
 Ile Ile Cys Phe Ser Val Tyr Gly Thr Ser Gly Glu Thr Ala Ser Leu
 50 55 60
 Val Phe Gly Ile Leu Ser Leu Ile Val Leu Val Leu Leu Ile Ile Glu
 65 70 75 80
 Cys Arg Asn Arg Glu Cys Cys Arg Arg Ile Ser
 85 90

<210>1163

<211>95

<212>PRT

<213>Chlamydia pneumoniae

<400>1163

Leu Gln Ala Gly Arg Ser Gly Ile Ile Pro Gly Lys Lys Ala Ile Leu

1 5 10 15
 Leu Asn Val Asn Asp Ala Lys Thr Pro Asn Tyr Ser Cys Ile Phe Glu
 20 25 30
 Ser Ile Gly Phe Phe Asn Glu Gln Asp Leu Glu Ala Gln His Asn Gln
 35 40 45
 Gln Ala Ala Leu Val Arg Lys Ile Leu Lys Val Val Pro His His Phe
 50 55 60
 Leu Lys Gly Leu Ile Ala Lys Leu Pro Arg Ser Leu Lys Lys Asp Arg
 65 70 75 80
 Lys Phe Met Ser Ser Leu Ile Phe Thr Lys Leu Ser Tyr Cys Phe
 85 90 95

<210>1164

<211>95

<212>PRT

<213>Chlamydia pneumoniae

<400>1164

Met Met Lys Ile Lys Lys Ala Ile Ser Arg His Ile Asp Arg Tyr Leu
 1 5 10 15
 Ser Pro Met Lys Ile Pro Ile Met Ala His Pro Gly Gln Lys Asp Ser
 20 25 30
 Pro Ser Thr Leu Ser Phe His Phe Pro Leu Ser Tyr Trp Phe Lys Glu
 35 40 45
 Leu Ser Ser His Gly Phe Leu Val Ser Gly Leu Glu Glu Trp Thr Ser
 50 55 60
 Ser Lys Thr Ser Thr Gly Lys Arg Ala Lys Ala Glu Asn Leu Cys Arg
 65 70 75 80
 Lys Glu Phe Pro Leu Phe Leu Met Ile Ser Cys Ile Lys Ile Lys
 85 90 95

<210>1165

<211>238

<212>PRT

<213>Chlamydia pneumoniae

<400>1165

Met Glu Asn Leu Ser Ser Ala Pro Ser Arg Ser Ile Trp Lys Ser Ile
 1 5 10 15
 Ile Gln Asn Lys Met Leu Val Leu Gly Leu Thr Thr Leu Ile Ile Leu
 20 25 30
 Met Leu Gly Ala Leu Leu Leu Pro Trp Phe Tyr Gln Asp Tyr Glu Gln
 35 40 45
 Thr Ser Leu Lys Asp Ile Leu Val Ser Pro Cys Ser Arg Phe Pro Phe
 50 55 60
 Gly Thr Asp Thr Leu Gly Arg Cys Met Phe Ala Arg Thr Leu Arg Gly
 65 70 75 80
 Leu Arg Leu Ser Leu Leu Ile Ala Thr Ile Ala Thr Leu Ile Asp Val
 85 90 95
 Cys Val Gly Leu Leu Trp Ala Thr Val Ala Ile Ser Gly Gly Lys Lys
 100 105 110
 Ile Asp Phe Leu Met Met Arg Thr Thr Glu Ile Leu Phe Ser Leu Pro
 115 120 125
 Arg Ile Pro Ile Ile Ile Leu Leu Leu Val Ile Phe His His Gly Leu
 130 135 140
 Leu Pro Leu Ile Leu Ala Met Thr Ile Thr Gly Trp Ile Pro Ile Ser
 145 150 155 160
 Arg Ile Ile Tyr Gly Gln Phe Leu Leu Leu Lys Asn Lys Pro Phe Val
 165 170 175
 Leu Ser Ala Lys Ala Met His Ala Ser Thr Phe His Ile Leu Lys Lys
 180 185 190
 His Leu Leu Pro Asn Thr Leu Ala Pro Ile Ile Ser Thr Leu Ile Phe
 195 200 205
 Thr Ile Pro Asn Ala Ile Tyr Thr Glu Ala Phe Ile Ser Phe Leu Gly
 210 215 220
 Leu Gly Ile Gln Pro Pro Gln Ala Lys Pro Arg His Leu Ser
 225 230 235

<210>1166

<211>211
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1166
 Met Gly Pro Leu Lys Lys Glu Glu Lys Thr Ile Leu Met Ile Phe Phe
 1 5 10 15
 Leu Leu Val Val Leu Trp Thr Phe Gly Asp Leu Leu Gly Ile Ser Ala
 20 25 30
 Thr Thr Ala Ala Leu Ile Gly Leu Ser Leu Leu Ile Leu Thr Asn Ile
 35 40 45
 Leu Asp Trp Gln Lys Asp Val Ile Ala Asn Thr Thr Ala Trp Glu Thr
 50 55 60
 Phe Ile Trp Phe Gly Ala Leu Ile Met Met Ala Ser Phe Leu Asn Gln
 65 70 75 80
 Leu Gly Phe Ile Pro Leu Val Gly Asp Ser Ala Ala Ala Leu Val Ser
 85 90 95
 Gly Leu Ser Trp Lys Ile Gly Phe Pro Leu Leu Phe Leu Ile Tyr Phe
 100 105 110
 Tyr Ser His Tyr Leu Phe Ala Ser Asn Thr Ala His Ile Gly Ala Met
 115 120 125
 Tyr Pro Ile Phe Leu Ala Val Ser Ile Ser Leu Gly Thr Asn Pro Ile
 130 135 140
 Phe Ala Ala Leu Thr Leu Ala Phe Ala Ser Asn Leu Phe Gly Gly Leu
 145 150 155 160
 Thr His Tyr Gly Ser Gly Pro Ala Pro Leu Tyr Phe Gly Ser His Leu
 165 170 175
 Val Thr Val Gln Glu Trp Trp Arg Ser Gly Phe Ala Leu Ser Ile Val
 180 185 190
 Asn Ile Val Ile Trp Ile Gly Ile Gly Ser Leu Trp Trp Lys Ala Leu
 195 200 205
 Gly Leu Ile
 210

<210>1167
 <211>81
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1167
 Leu Lys Met Glu Thr Tyr Ser Phe Ser Thr Glu Leu Gln Lys Asn Thr
 1 5 10 15
 Ser Leu Tyr Ile Met Glu Lys Leu Asp Ser Tyr Phe Ser Phe Gln Gly
 20 25 30
 Lys Arg Thr Arg Val Ile Ala Ile Thr Pro Ala Gly Leu Ala Ile Ala
 35 40 45
 Tyr Glu Gln Asn Ile His Leu Ser Met Thr Val Lys Ile Leu Lys Val
 50 55 60
 Leu Ser Phe Pro Arg Ser Leu Leu Arg Thr Thr Ser Leu Trp Tyr Arg
 65 70 75 80
 Pro

<210>1168
 <211>228
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1168
 Leu Lys Gly Phe Leu Ser Val Asn Glu Leu Ile Phe Gly Phe Gln Thr
 1 5 10 15
 Phe Ser Val Val Leu Gly Val Phe Phe Ala Ser Arg Gly Lys Ala
 20 25 30
 Trp Leu Thr Gly Trp Leu Ser Leu Ser Ser Ile Met Asn Val Phe
 35 40 45
 Val Leu Lys Gln Ile His Leu Trp Gly Phe Glu Val Thr Ser Ala Asp
 50 55 60
 Val Tyr Val Ile Gly Leu Leu Thr Cys Leu Asn Tyr Ala Arg Glu His
 65 70 75 80

PCT/IB98/01890

```

<210>1169
<211>189
<212>PRT
<213>Chlamydia pneumoniae
<400>1169
Leu Gly Ile Phe Cys Phe Lys Lys Ile Asn Leu Phe Lys Thr Phe Ile
  1          5          10          15
Leu Met Asn Asn Asn Val Tyr Leu Phe Cys Phe Leu Ile Phe Leu Ser
          20          25          30
Lys Lys Val Phe Phe Glu Ser Tyr Glu Asp Phe Ala Asn Val Ala Ser
          35          40          45
Ser Trp Pro Lys Ser Leu Arg Ala Leu Val Gln Gly Arg Tyr Phe Val
          50          55          60
Asp Ser Glu Leu Lys Glu Thr Pro Tyr Arg Ile His Asp Phe Lys Lys
  65          70          75          80
Thr Pro Ile His His Arg Leu Tyr Arg Ser Leu Pro Ile Ile Ser Thr
          85          90          95
Ile Gly Gly Ile Ile Arg Leu Ile Glu Ala His Ser Gly Pro Ile His
          100          105          110
Pro Arg Asp Lys Met Lys Tyr Arg Phe Glu Val Leu Gln Ala Val Ile
          115          120          125
Glu Ile Leu Gly Leu Gly Val Leu Ile Leu Val Phe Asp Ile Ile Gly
          130          135          140
Cys Phe Leu Ala Phe Leu Val Ala Ile Ile Leu Ser Leu Leu Leu Tyr
  145          150          155          160
Cys Asn Ser Thr Phe Thr Cys Val Gln Asn Leu Ser Phe Thr Glu Arg
          165          170          175
Met Leu Glu Gly Ile Gly Glu Ala Val Asn Phe Leu Ala
          180          185

```

```

100
<210>1170
<211>92
<212>PRT
<213>Chlamydia pneumoniae
<400>1170
Val Gly Leu Ser Tyr Trp Asp Ser Gly Phe Val Val Leu Ala Cys Lys
 1          5          10          15
Val Leu Ala Thr Ala Leu Lys Phe Leu Phe Ser Lys Ala Ser Ser Lys
          20          25          30
Ile Lys Gln Met Lys Trp Arg Glu Lys Ala Arg Asn Leu Ala Ala Lys
          35          40          45
Asp Thr Val Gln Ser Ile Lys Glu Phe Cys Ser Val Asp Leu Thr Ser
          50          55          60
Cys Phe Thr Arg Cys Phe Arg Leu Arg Asn Arg Val Val Glu Glu Gly
 65          70          75          80

```

Ala Ser Glu Asn Gln Thr Val Arg Glu Ile Ile Val
85 90

<210>1171

<211>130

<212>PRT

<213>Chlamydia pneumoniae

<400>1171

Met Val Asn Arg Tyr Lys Ser Ser Ala Glu Phe Ser Ala Asp His Tyr
1 5 10 15
Tyr Asp Asp Asn Leu Val Arg Met Gly Tyr Lys Arg Asn Leu Arg Gly
20 25 30
Leu Ala Pro Val Glu Asn Glu Val Cys Leu Phe Glu Glu Asn Asn Leu
35 40 45
Leu Glu Ser Val Met Ala Ser Ile Pro Ile Met Gly Ser Ile Leu Gly
50 55 60
Leu Gly Arg Leu His Ser Val Trp Ser Thr Gln Asp Pro Lys Asp Ser
65 70 75 80
Lys Ile Ser Ile Ile Phe His Thr Ala Leu Gly Ile Leu Glu Thr Leu
85 90 95
Gly Leu Gly Ile Ile Val Leu Leu Ile Lys Ile Thr Ile Thr Ile Leu
100 105 110
Leu Ile Leu Phe Thr Pro Cys Leu Leu Cys Tyr Phe Met Tyr Ser Cys
115 120 125
Cys Leu
130

<210>1172

<211>125

<212>PRT

<213>Chlamydia pneumoniae

<400>1172

Met Thr Lys Asn Ala Ile Asn Ser Gln Thr Thr Thr Pro Gln Pro Asn
1 5 10 15
Leu Thr Asp Ala Glu Pro Ile Ala Ser Arg Ala Gln Cys Lys Ser Ile
20 25 30
Ala Val Ile Ile Ser Leu Phe Ala Leu Gly Met Leu Leu Leu Cys Leu
35 40 45
Gly Ile Ile Leu Ile Ser Ile Pro Ile Pro Gly Leu Ala Ala Gln Val
50 55 60
Ala Leu Gly Leu Gly Ile Val Ser Leu Ile Leu Gly Ile Ala Leu Ala
65 70 75 80
Asn Ile Gly Phe Leu Cys Leu Leu Leu Arg Cys Lys Gln Phe Pro Lys
85 90 95
Asn Pro Ile His Cys Pro Leu Lys Ala Leu Asn Ser Leu Pro Arg Glu
100 105 110
Ala Leu Pro Pro His Ser His Gly Lys Leu Glu Asn Phe
115 120 125

<210>1173

<211>141

<212>PRT

<213>Chlamydia pneumoniae

<400>1173

Leu Lys Glu Ile Met Met Ile Asn Phe Ile Arg Ser Tyr Ala Leu Tyr
1 5 10 15
Phe Ala Trp Ala Ile Ser Cys Ala Gly Thr Leu Ile Ser Ile Phe Tyr
20 25 30
Ser Tyr Ile Leu Asn Val Glu Pro Cys Ile Leu Cys Tyr Tyr Gln Arg
35 40 45
Ile Cys Leu Phe Pro Leu Thr Val Ile Leu Gly Ile Ser Ala Tyr Arg
50 55 60
Glu Asp Ser Ser Ile Lys Leu Tyr Ile Leu Pro Gln Ala Val Leu Gly
65 70 75 80
Leu Gly Ile Ser Ile Tyr Gln Val Phe Leu Gln Glu Ile Pro Gly Met
85 90 95
Gln Leu Asp Ile Cys Gly Arg Val Ser Cys Ser Thr Lys Ile Phe Leu

100 105 110
 Phe Ser Tyr Val Thr Ile Pro Met Ala Ser Val Val Ala Phe Gly Ala
 115 120 125
 Ile Val Cys Leu Leu Val Leu Thr Lys Asn Tyr Arg Gly
 130 135 140

<210>1174

<211>146

<212>PRT

<213>Chlamydia pneumoniae

<400>1174

Leu Xaa Ile Glu Gln Glu Asn Phe Ser Phe Lys Phe Lys Lys Ser Ala
 1 5 10 15
 Leu Ser Phe Thr Tyr Asn Thr Ala Asn Leu Thr Lys Ser Thr Phe Thr
 20 25 30
 Phe Ile Leu Leu Leu Leu Arg Lys Lys Asp Gln Gly Leu Arg Phe
 35 40 45
 Met Asp Lys Glu Thr Leu Glu Asn Ile Tyr Arg His Phe Arg Tyr Arg
 50 55 60
 Phe Leu Lys Leu Asn Ile Leu Pro Ala Phe Leu Gly Leu Leu Leu Leu
 65 70 75 80
 Cys Ser Pro Asn Thr Leu Asn Tyr Thr Gln Val Asp Val Ile Phe Ser
 85 90 95
 Asp Arg Leu Cys Ser Cys Leu Leu Ile Phe Leu Ala Ile Ala Ser Leu
 100 105 110
 Thr Lys Arg Ser Leu Leu Trp Leu Gly Ala Pro Leu Gly Ile Trp Val
 115 120 125
 Thr Leu Phe Ala Cys Val Ala Asp Asp Leu Leu Leu Phe Leu Gln Met
 130 135 140
 Ile Leu
 145

<210>1175

<211>95

<212>PRT

<213>Chlamydia pneumoniae

<400>1175

Leu Leu Val Phe Val Lys Val Asn Ser Ser Met Gly Leu Pro Thr Phe
 1 5 10 15
 Pro Xaa Xaa Phe Leu Asn Ile Cys Cys Trp Phe Ile Ile Val Leu Phe
 20 25 30
 Ile Leu Ala Phe Ala Glu Ser Leu Arg His Leu Arg Trp Met Asn Leu
 35 40 45
 Ile Phe Ser Ala Ala Ile Leu Phe Ser Pro Val Leu Phe His Ile Pro
 50 55 60
 Val Glu Ser Pro Met Phe Leu Pro Ile Ile Val Thr Gly Leu Ile Leu
 65 70 75 80
 Ile Ile Leu Ser Ile Gly Lys Arg Arg Arg Thr Lys Arg Lys Leu
 85 90 95

<210>1176

<211>85

<212>PRT

<213>Chlamydia pneumoniae

<400>1176

Leu Val Tyr Phe Met Val Phe Ser Pro Ser Ser Glu Ser Val Val Lys
 1 5 10 15
 Ala Asn Ser Val Val Arg Ser Asn Phe Cys Tyr Phe Leu Glu Asn Lys
 20 25 30
 Phe Val Ser Pro Ser Glu Ser Thr Glu Val Met Phe Ser Glu Ile Met
 35 40 45
 Lys Gly Arg Val Pro Asp Ile Glu Ser Leu Phe Asp Arg Pro Thr Asp
 50 55 60
 Met Met Met Thr Gly Phe Lys Xaa Arg Arg Ile Trp Gly Ile Cys Ser
 65 70 75 80
 Ile Ala Ser Glu Tyr
 85

<210>1177
 <211>114
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1177
 Met Leu Tyr Pro Val Ile Ala Val Val Cys Ala Val Val Ser Val Val
 1 5 10 15
 Leu Leu Ile Leu Lys Val Leu Phe Leu Leu Leu Ser Phe Pro Phe Lys
 20 25 30
 Leu Cys Ser Ala Ser Ser Ala Leu Pro Gly Glu Arg Val Ser Leu Gly
 35 40 45
 Ser His Phe Lys Cys Leu Tyr Gly Gly Gly Leu Pro Tyr Leu Leu Ala
 50 55 60
 Cys Leu Leu Ile Val Pro Val Ile Gly Thr Ala Ile His Gly Phe Ile
 65 70 75 80
 Ile Ser His Arg Thr Ser Glu Asp Ala Arg Leu Ser Ser Ala Ile Val
 85 90 95
 Phe Met Gln Ala Pro Ile Leu Gln Leu Ala Gly Met Ser Gly Leu Ile
 100 105 110
 Lys Pro

<210>1178
 <211>79
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1178
 Leu Phe Phe Tyr Ile Tyr Ser Ile Leu Lys Arg Tyr Ile Val Val Leu
 1 5 10 15
 Gly Lys Ile Leu Gly Leu Ile Thr Ile Gln Phe Tyr Gln Asn Leu Gly
 20 25 30
 Gly Met Ser Ser Glu Arg Tyr Ser Ala Leu His Ser Arg Lys Ser Leu
 35 40 45
 Ser Val Leu Pro His Val Val Arg Lys Val Leu Leu Ser Phe Pro Asp
 50 55 60
 Phe Arg Gly Asn Gly Asp Val Asn Leu Arg Asn Ile Arg Ser Asp
 65 70 75

<210>1179
 <211>163
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1179
 Leu Lys Ala Lys Ala Tyr Leu Asp Lys Gly Ala Phe Val Pro Ser Asp
 1 5 10 15
 Phe Val Trp Glu Ile Leu Lys Glu Lys Leu Gln Ser Gln Ala Cys Ser
 20 25 30
 Lys Gly Cys Ile Ile Asp Gly Phe Pro Arg Thr Leu Asp Gln Ala His
 35 40 45
 Leu Leu Asp Ser Phe Leu Met Asp Val His Ser Asn Tyr Thr Val Ile
 50 55 60
 Phe Leu Glu Ile Ser Glu Asp Glu Ile Leu Lys Arg Val Cys Ser Arg
 65 70 75 80
 Phe Leu Cys Pro Ser Cys Ser Arg Ile Tyr Asn Thr Ser Gln Gly His
 85 90 95
 Thr Glu Cys Pro Asp Cys His Val Pro Leu Ile Arg Arg Ser Asp Asp
 100 105 110
 Thr Pro Glu Ile Ile Lys Glu Arg Leu Thr Lys Tyr Gln Glu Arg Thr
 115 120 125
 Ala Pro Val Ile Ala Tyr Tyr Asp Ser Leu Gly Lys Leu Cys Arg Val
 130 135 140
 Ser Ser Glu Asn Lys Glu Asp Leu Val Phe Glu Asp Ile Leu Lys Cys
 145 150 155 160
 Ile Tyr Lys

<210>1180

<211>128

<212>PRT

<213>Chlamydia pneumoniae

<400>1180

Met Ser Gln Cys Gln Ser Ser Ser Thr Ser Thr Trp Glu Trp Met Lys
 1 5 10 15
 Ser Phe Val Pro Asn Trp Lys Asn Pro Thr Pro Pro Leu Ser Pro Ile
 20 25 30
 Pro Ser Glu Asp Glu Phe Ile Leu Ala Tyr Glu Pro Phe Val Leu Pro
 35 40 45
 Lys Thr Asp Pro Glu Asn Ala Gln Ala Asn Pro Pro Gly Thr Ser Thr
 50 55 60
 Pro Asn Val Glu Asn Gly Ile Asp Asp Leu Asn Pro Leu Leu Gly Gln
 65 70 75 80
 Pro Asn Glu Gln Asn Asn Ala Asn Asn Pro Gly Thr Ser Gly Ser Asn
 85 90 95
 Pro Thr Ser Leu Pro Ala Pro Glu Arg Leu Pro Glu Thr Glu Glu Asn
 100 105 110
 Ser Gln Glu Glu Glu Gln Gly Ser Gln Asn Asn Glu Asp Leu Ile Gly
 115 120 125

<210>1181

<211>94

<212>PRT

<213>Chlamydia pneumoniae

<400>1181

Leu Lys Ser Met Leu Asp Pro Lys Lys His Ser Thr Leu Gly Ile Glu
 1 5 10 15
 Ile Ser Ser Glu Thr Ala Glu Thr Ile Glu Ser Cys Ser Leu Gly Leu
 20 25 30
 Ile Ser Ile Asn Leu Leu Leu Ser Gly Leu Cys Leu Arg Ser Ser His
 35 40 45
 Asp Arg Ser Gln Ala Val Lys Ile Ile Gln Gln Phe Cys Pro Gln Phe
 50 55 60
 Ser Ser Glu Glu Val Gln Asn Phe Val Glu Gln Arg Asn Ile Leu Leu
 65 70 75 80
 His Phe Tyr Ile Ile Cys Leu Lys Gly Thr Lys Ser Pro Cys
 85 90

<210>1182

<211>314

<212>PRT

<213>Chlamydia pneumoniae

<400>1182

Met Asn Lys Lys His Ala Ser Phe Ser Ser Arg Leu Gly Phe Ile Phe
 1 5 10 15
 Ser Met Ile Gly Ile Ala Val Gly Ala Gly Asn Ile Trp Arg Phe Pro
 20 25 30
 Arg Val Ala Ala Gln Asn Gly Gly Gly Ala Phe Leu Ile Leu Trp Leu
 35 40 45
 Cys Phe Leu Phe Leu Trp Ser Ile Pro Leu Ile Ile Ile Glu Leu Ser
 50 55 60
 Ile Gly Lys Leu Thr Lys Lys Ala Pro Ile Gly Ala Leu Ile Lys Thr
 65 70 75 80
 Ala Gly Lys Lys Phe Ala Trp Ala Gly Gly Phe Ile Thr Leu Val Thr
 85 90 95
 Thr Cys Ile Leu Ala Tyr Tyr Ser Thr Ile Val Gly Trp Gly Leu Ser
 100 105 110
 Tyr Phe Tyr Tyr Ala Val Ser Gly Lys Ile His Leu Gly Asn Asp Phe
 115 120 125
 Ala Lys Leu Trp Thr Ser His Tyr Gln Ser Ser Ile Pro Leu Trp Ala
 130 135 140
 His Leu Thr Ser Leu Gly Leu Ala Tyr Leu Val Ile Arg Lys Gly Ile
 145 150 155 160
 Val His Gly Ile Glu Lys Cys Asn Lys Ile Leu Ile Pro Ala Phe Phe
 165 170 175

Leu Cys Thr Ile Ala Leu Leu Leu Arg Ala Val Thr Leu Pro Gly Ala
 180 185 190
 Val Gln Gly Ile Lys Gln Leu Phe Ser Cys Asp Lys Ser Cys Phe Ser
 195 200 205
 Asn Tyr Lys Val Trp Ile Glu Ala Leu Thr Gln Asn Ala Trp Asp Thr
 210 215 220
 Gly Ala Gly Trp Gly Leu Leu Leu Val Tyr Ala Gly Phe Ala Ser Lys
 225 230 235 240
 Lys Thr Gly Val Val Ser Asn Gly Ala Leu Thr Ala Ile Cys Asn Asn
 245 250 255
 Leu Val Ser Leu Ile Met Gly Asp His Tyr Leu Phe His Met Cys Phe
 260 265 270
 Phe Arg His Phe Arg Asn His Ala Thr Arg Trp Ser Arg Ser Xaa
 275 280 285
 Lys His Arg Asp Tyr Leu Tyr Leu Pro Thr Arg Val Ile Tyr Pro Phe
 290 295 300
 Ala Trp Arg Asn Leu Ser Asn His Pro Val
 305 310

<210>1183

<211>132

<212>PRT

<213>Chlamydia pneumoniae

<400>1183

Met Arg Ala Glu Met Ala Val Ile Tyr Trp Asp Arg Ser Lys Ile Val
 1 5 10 15
 Trp Ser Phe Glu Pro Trp Ser Leu Arg Leu Thr Trp Tyr Gly Val Phe
 20 25 30
 Phe Thr Val Gly Ile Phe Leu Ala Cys Leu Ser Ala Arg Tyr Leu Ala
 35 40 45
 Leu Ser Tyr Tyr Gly Leu Lys Asp His Leu Ser Phe Ser Lys Ser Gln
 50 55 60
 Leu Arg Val Ala Leu Glu Asn Phe Phe Ile Tyr Ser Ile Leu Phe Ile
 65 70 75 80
 Val Pro Gly Ala Arg Leu Ala Tyr Val Ile Phe Tyr Gly Trp Ser Phe
 85 90 95
 Tyr Leu Gln His Pro Glu Glu Ile Ile Gln Ile Trp His Gly Gly Leu
 100 105 110
 Ser Ser His Gly Gly Val Leu Trp Leu Ser Phe Val Gly Gly His Phe
 115 120 125
 Phe Leu Asp Ile
 130

<210>1184

<211>171

<212>PRT

<213>Chlamydia pneumoniae

<400>1184

Met Ser Val His Ile Thr Pro Arg Lys Cys Phe Ile Leu Cys Ile Leu
 1 5 10 15
 Ser Met Phe Thr Leu Pro Thr Leu Phe Pro Lys Ala His Leu Ile Leu
 20 25 30
 Phe Ser Pro Tyr Ile Val Leu Cys Phe Tyr Cys Phe Ser Lys Asp Lys
 35 40 45
 Gly Leu Val Leu Ala Leu Gly Cys Gly Val Leu Ser Asp Leu Ala Leu
 50 55 60
 Gly Ser Arg Gly Val Phe Leu Leu Leu Tyr Pro Leu Thr Ala Leu Ile
 65 70 75 80
 Thr His Lys Ala His Leu Ile Phe Ser Lys Glu Ser Lys Ala Ala Leu
 85 90 95
 Val Ile Val Asn Met Ile Phe Tyr Gly Val Phe Leu Leu Leu Thr Ile
 100 105 110
 Pro Met Cys Ala Leu Phe Gly His Glu Val Arg Trp Ser Ile Asp Val
 115 120 125
 Leu Met Ile Pro Leu Lys Cys Ser Phe Leu Asp Asn Leu Ile Phe Thr
 130 135 140

Ser Val Ile Tyr Ile Leu Pro Cys Ala Ile Asn Ser Gly Ile His Lys
 145 150 155 160
 Met Ile Ser Phe Phe Arg Arg Leu Val Cys Tyr
 165 170

<210>1185

<211>205

<212>PRT

<213>Chlamydia pneumoniae

<400>1185

Met Phe Met Lys Ile Cys Ser Leu Lys Leu Lys Asn Phe Arg Asn His
 1 5 10 15
 Ser Asp Leu Glu Ile Ser Leu Ala Pro Lys Leu Asn Tyr Ala Gln Gly
 20 25 30
 Lys Thr Asn Leu Leu Glu Ala Leu Tyr Val Leu Ser Leu Gly Arg Ser
 35 40 45
 Phe Arg Thr Gln His Leu Thr Asp Thr Ile Thr Phe Gly Ser Ser His
 50 55 60
 Phe Phe Leu Glu Thr Gln Phe Glu Lys Asp His Leu Pro Gln Ala Leu
 65 70 75 80
 Ser Ile Tyr Thr Asp Lys Gln Gly Lys Lys Ile Cys Tyr Asn Gln Leu
 85 90 95
 Pro Ile Lys Thr Leu Ser Gln Leu Ile Gly Lys Val Pro Ile Val Leu
 100 105 110
 Phe Ser Ser Lys Asp Arg Leu Leu Ile Ser Gly Ala Pro Ala Asp Arg
 115 120 125
 Arg Leu Phe Leu Asn Leu Leu Ser Gln Cys Asp Asn His Tyr Thr
 130 135 140
 Leu Cys Leu Ser Tyr Tyr His Arg Ala Leu Gln Gln Arg Asn Ala Leu
 145 150 155 160
 Leu Lys Ser Lys Gln Thr Ser Thr Val Ala Ser Gly Met Asn Ser Trp
 165 170 175
 Ser Asn Thr Ala Pro Thr Tyr Pro Ser Asn Gly Phe Ser Val Val Arg
 180 185 190
 Asn Phe Gln Ile Tyr Pro Lys Asn Phe Gly Leu Thr Thr
 195 200 205

<210>1186

<211>81

<212>PRT

<213>Chlamydia pneumoniae

<400>1186

Leu Arg Phe Arg Asn Ile Lys Lys Ser Leu Ile Phe Ile Lys Arg Ile
 1 5 10 15
 Arg Tyr Ser Gln Ser Gly Lys Glu Gln Lys Gly Ala Arg Pro Phe Phe
 20 25 30
 Lys Lys Ser Ile Thr Ser Ser Leu Val Ile Leu Leu Glu Ala Ile
 35 40 45
 Phe Asn Glu Asn Phe Ser Ser Ile Ile Gln Asn Asn Phe Asn Lys Asn
 50 55 60
 Phe Lys Asn Lys Asn Ile Ser Ile Asn Arg Ile Phe Val Lys Phe Thr
 65 70 75 80
 Ile

<210>1187

<211>79

<212>PRT

<213>Chlamydia pneumoniae

<400>1187

Val Gln Leu Phe Gln Tyr Met Asn Glu Ser Gly Trp Asp Trp Leu Cys
 1 5 10 15
 Asp Phe Asp Ser Gln Gly Glu Gly Phe Gln Leu Ser Arg Leu Val Gly
 20 25 30
 Leu Leu His Ser Ser Trp Ala Leu Tyr Glu Ala Lys Glu Gln Phe Tyr
 35 40 45
 Leu Pro Glu Val Ser Leu Leu Thr Trp Glu Glu Leu Ile Glu Met Gln

50 55 60
 Phe Val Lys Gln Thr Asn Lys Thr Arg Gly Cys Lys Arg Ser Leu
 65 70 75
 <210>1188
 <211>119
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1188
 Met Pro Val Ser Ser Ala Pro Leu Pro Thr Ser His Arg Pro Ser Ser
 1 5 10 15
 Gly Asn Leu Gly Leu Met Glu Pro Asn Ser Lys Ala Leu Lys Ala Lys
 20 25 30
 His Gln Asp Lys Thr Thr Lys Thr Ile Lys Leu Leu Val Lys Ile Leu
 35 40 45
 Val Ala Ile Leu Val Ile Glu Val Leu Gly Ile Ile Ala Ala Phe Phe
 50 55 60
 Ile Pro Gly Thr Pro Pro Ile Cys Leu Ile Ile Leu Gly Gly Leu Ile
 65 70 75 80
 Leu Thr Thr Val Leu Cys Val Leu Leu Leu Val Ile Lys Leu Ala Leu
 85 90 95
 Val Asn Lys Thr Glu Gly Thr Thr Ala Glu Gln Gln Ile Lys Arg Lys
 100 105 110
 Leu Ser Ser Lys Ser Ile Ser
 115
 <210>1189
 <211>105
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1189
 Met Ser Ser Pro Val Val Thr Gly Thr Ser Ser Ala Ser Pro Val Glu
 1 5 10 15
 Gln Thr Lys Leu Gly Glu Phe Leu Glu Arg Leu Ser Gly Ser Gly Arg
 20 25 30
 Cys Ile Lys Ile Ala Phe Ala Ala Ser Thr Ala Leu Leu Leu Asn
 35 40 45
 Thr Phe Val Ser Gly Ile Val Ala Ile Ala Met Ile Phe Val Ala Thr
 50 55 60
 Ser Val Gly Ala Tyr Phe Thr Val Ile Gly Pro Leu Phe Leu Leu Ser
 65 70 75 80
 Leu Ile Leu Leu Ala Ile Met Leu Ile Ser Met Tyr Lys Ile Thr His
 85 90 95
 Pro Ser Gln Asn Thr Pro Ile Ser Asn
 100 105
 <210>1190
 <211>162
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1190
 Met Leu Cys Thr Cys Ser Arg Ile Gln Asp Gly Asn Pro Trp Met Lys
 1 5 10 15
 Ser Glu Arg Leu Lys Lys Leu Glu Ser Glu Leu His Asp Leu Thr Gln
 20 25 30
 Trp Met Gln Leu Gly Leu Val Pro Lys Lys Glu Ile Ser Arg His Gln
 35 40 45
 Glu Glu Ile Arg Ile Leu Glu His Lys Ile Tyr Glu Glu Lys Glu Arg
 50 55 60
 Leu Gln Leu Leu Lys Glu Asn Gly Glu Ile Glu Glu Tyr Val Thr Pro
 65 70 75 80
 Arg Arg Ser Pro Ala Lys Thr Val Tyr Pro Asp Gly Pro Ser Met Ser
 85 90 95
 Asp Ile Glu Phe Val Glu Pro Thr Glu Thr Glu Ile Asp Ile Asp Pro
 100 105 110
 Gly Glu Thr Val Glu Leu Glu Leu Thr Asp Glu Gly Arg Glu Asp Gly
 115 120 125

Ala Val Glu Val Asp Tyr Ser His Glu Asp Asp Glu Asp Pro Phe Ser
 130 135 140
 Asp Arg Asn Arg Trp Arg Arg Gly Gly Ile Ile Asp Pro Asp Ala Asn
 145 150 155 160
 Glu Trp

<210>1191

<211>83

<212>PRT

<213>Chlamydia pneumoniae

<400>1191

Leu Val Ile Gln Ile Gly Val Leu Pro Pro Leu Val Ala Thr Lys Lys
 1 5 10 15
 Ile Asp Ile Asn Arg Phe Met Gln Asp Ala Asp Asn Trp Ile Pro Met
 20 25 30
 Phe Ser His Pro Phe Phe Leu Arg Glu Lys Thr Leu Ser Asp Gly Lys
 35 40 45
 Asp Ile His Ile Leu Ser Arg Leu Lys Gly Leu Gln Thr Cys Ala Pro
 50 55 60
 Cys Ser Pro His Glu Glu Arg Thr Ile Thr Leu Leu Ser His Ser Asn
 65 70 75 80
 Ser Val Ser

<210>1192

<211>95

<212>PRT

<213>Chlamydia pneumoniae

<400>1192

Met Asn Lys Ser Arg Phe Leu Arg Leu Cys Cys Cys Leu Cys Phe Cys
 1 5 10 15
 Gly Ser Leu Phe Tyr Phe Tyr Ile Asn Lys Gln Asn Ser Leu Thr Lys
 20 25 30
 Leu Arg Leu Glu Ile Pro Cys Leu Ser Val Arg Leu Arg Gln Leu Glu
 35 40 45
 Gln Gln Asn Ile Ser Leu Arg Phe Leu Ile Asp Lys Ile Glu Arg Pro
 50 55 60
 Asp His Leu Met Glu Ile Ala Ala Leu Pro Glu Tyr Gln Tyr Leu Glu
 65 70 75 80
 Tyr Pro Ser Glu Glu Ser Ile Ser Leu Leu Ser Tyr Glu Leu Pro
 85 90 95

<210>1193

<211>101

<212>PRT

<213>Chlamydia pneumoniae

<400>1193

Met Asp Pro Ala Ser Pro Val Ala Pro His Val Leu Gln Asp His Val
 1 5 10 15
 Gln Leu Ser Ser Glu Glu Leu Ser Ala Leu Ser Ser Gly Val Ser Arg
 20 25 30
 Val Lys Lys Leu Thr Ile Ala Ile Met Val Leu Ser Leu Ile Ala Ile
 35 40 45
 Ser Leu Val Ala Cys Gly Leu Phe Leu Thr Gly Ser Ala Pro Leu Gln
 50 55 60
 Leu Ser Ile Trp Ile Ala Ala Ser Cys Ile Thr Leu Ser Met Leu Val
 65 70 75 80
 Cys Ala Cys Trp Arg Tyr Lys Ile Ser Asn Ala Leu Glu Lys Thr Lys
 85 90 95
 Val Ala His Glu Ser
 100

<210>1194

<211>77

<212>PRT

<213>Chlamydia pneumoniae

<400>1194

Val Met Trp Tyr Ser Asp Tyr His Val Trp Ile Leu Pro Val His Glu
 1 5 10 15
 Arg Val Val Arg Leu Gly Leu Thr Glu Lys Met Gln Lys Asn Leu Gly
 20 25 30
 Ala Ile Leu His Val Asp Leu Pro Ser Val Gly Ser Leu Cys Lys Glu
 35 40 45
 Gly Glu Val Leu Val Ile Leu Glu Ser Ser Lys Ser Ala Ile Arg Gly
 50 55 60
 Val Lys Ser Cys Ile Arg Arg Gly Tyr Arg Tyr Gln Pro
 65 70 75

<210>1195

<211>172

<212>PRT

<213>Chlamydia pneumoniae

<400>1195

Met Gly Phe Lys Asn Ile Cys Lys Gln Gly Ser Gln Leu Tyr Leu Asn
 1 5 10 15
 Gly Ile Phe Pro Glu Arg Ile Leu Ala Arg Lys Leu Lys Asn Cys Ala
 20 25 30
 Lys Ser Tyr Pro Arg Thr Ala Leu Thr Ile Glu Val Leu Val Ser Ser
 35 40 45
 Val Leu Gly Ala Leu Lys Val Ile Leu Ile Pro Cys Ala Ser Thr Tyr
 50 55 60
 Ala Ala Leu Thr Leu Pro Leu Arg Ala Leu Phe Asn Ala Ile Lys Thr
 65 70 75 80
 Lys Ser Cys Gln His Leu Ala Ser Tyr Ala Met Ala Trp Leu Leu His
 85 90 95
 Ile Leu Thr Ile Ala Val Ile Ile Gly Leu Val Phe Ser Leu Val Phe
 100 105 110
 Ile Pro Pro Pro Val Val Phe Ile Ser Leu Gly Leu Leu Met Ser Val
 115 120 125
 Thr Thr Ser Val Thr Leu Phe Gln Val His Lys Asn Leu Phe Pro Pro
 130 135 140
 Tyr Glu Pro Pro Pro Ser Arg Pro His Thr Pro Pro Pro Phe Ala Asp
 145 150 155 160
 Glu Tyr Val Pro Leu Ile Ser Glu Ser Tyr Phe Asp
 165 170

<210>1196

<211>224

<212>PRT

<213>Chlamydia pneumoniae

<400>1196

Val Thr Pro Ser Ala Asp Asp Ala Lys Lys Ile Ala Val Glu Lys Lys
 1 5 10 15
 Lys Asp Leu Ser Ala Ser Ala Arg Met Glu Glu His Glu Ala Ser Gln
 20 25 30
 Arg Gln Asp Ala Arg His Arg Arg Ile Gly Arg Glu Ala Gln Gly Ser
 35 40 45
 Phe Phe Tyr Ser Ser Arg Asn Pro Glu His Arg Arg Ser Phe Gly Ser
 50 55 60
 Leu Ser Arg Phe Lys Thr Lys Pro Ser Asp Ala Ala Ser Thr Arg Pro
 65 70 75 80
 Ala Ser Ile Ser Pro Pro Phe Lys Asp Asp Phe Gln Pro Tyr His Phe
 85 90 95
 Lys Asp Leu Arg Ser Ser Ser Phe Gly Ser Gly Ala Ser Ser Ala Phe
 100 105 110
 Thr Pro Ile Met Pro Ala Ser Ser Arg Ser Pro Asn Phe Ser Thr Gly
 115 120 125
 Thr Val Leu His Pro Glu Pro Val Tyr Pro Lys Gly Lys Glu Pro
 130 135 140
 Ser Ile Pro Arg Val Ser Ser Ser Ser Arg Arg Ser Pro Arg Asp Arg
 145 150 155 160
 Gln Asp Lys Gln Gln Gln Gln Asn Gln Asp Glu Glu Gln Lys Gln
 165 170 175

Gln Ser Lys Lys Lys Ser Gly Lys Ser Asn Gln Ser Leu Lys Thr Pro
 180 185 190
 Pro Pro Asp Gly Lys Ser Thr Ala Asn Leu Ser Pro Ser Asn Pro Phe
 195 200 205
 Ser Asp Gly Tyr Asp Glu Arg Glu Lys Arg Lys His Arg Lys Asn Lys
 210 215 220

<210>1197

<211>139

<212>PRT

<213>Chlamydia pneumoniae

<400>1197

Leu Ile Lys Lys Arg Ala Ile Phe Glu Arg Met Phe Pro Ile Pro Pro
 1 5 10 15
 Pro His Cys Pro Pro Asn Asn Lys Asn Asn Phe Tyr His Leu Thr Thr
 20 25 30
 Asp Thr Lys Asp Pro Leu Leu Leu Arg Ile Leu Arg Thr Ile Gly Tyr
 35 40 45
 Val Leu Leu His Ile Ile Thr Leu Gly Leu Leu Leu Ile His Tyr
 50 55 60
 Tyr Lys His His Arg Val Val Arg Lys Glu Gly Leu Pro Thr Pro Pro
 65 70 75 80
 Thr Leu Pro Lys Gly Pro Glu Pro Lys Thr Ile Glu Ile Ala Lys Gln
 85 90 95
 Pro Pro Lys Asp Gly Glu Asp Lys Lys Pro Asp Val Pro Lys Pro Gly
 100 105 110
 Thr Pro Pro Pro Glu Asp Thr Pro Pro Pro Pro Pro Lys Ala Pro Ser
 115 120 125
 Pro Ala Ser Pro Lys Val Pro Lys Thr Thr Cys
 130 135

<210>1198

<211>79

<212>PRT

<213>Chlamydia pneumoniae

<400>1198

Val Val Glu Ser Ala Phe Tyr Gln Gln Val Val Leu Gly Thr Phe Gly
 1 5 10 15
 Leu Ala Gly Glu Gly Ala Leu Gly Gly Gly Gly Val Ser Ser Gly
 20 25 30
 Gly Gly Val Pro Gly Leu Gly Thr Ser Gly Phe Leu Ser Ser Pro Ser
 35 40 45
 Leu Gly Gly Cys Leu Ala Ile Ser Ile Val Phe Gly Ser Gly Pro Leu
 50 55 60
 Gly Arg Val Gly Gly Val Gly Lys Pro Ser Phe Leu Thr Thr Arg
 65 70 75

<210>1199

<211>90

<212>PRT

<213>Chlamydia pneumoniae

<400>1199

Leu Asp Asp Ser Trp Ile Leu Glu Val Lys Val Thr Pro Lys Ala Lys
 1 5 10 15
 Glu Asn Lys Ile Val Gly Phe Asp Gly Gln Ala Leu Lys Val Arg Val
 20 25 30
 Thr Glu Pro Pro Glu Lys Gly Lys Ala Asn Asp Ala Val Ile Ser Leu
 35 40 45
 Leu Ala Lys Ala Leu Ser Leu Pro Lys Arg Asp Val Thr Leu Ile Ala
 50 55 60
 Gly Glu Thr Ser Arg Lys Lys Lys Phe Leu Leu Pro Asn Arg Val Gln
 65 70 75 80
 Asp Ile Ile Phe Ser Leu His Ile Asp Val
 85 90

<210>1200

<211>107

<212>PRT

<213>Chlamydia pneumoniae

<400>1200

Leu Gln Asn Ser Met His Lys Val Phe Ala Asp Pro Ser Leu Thr Asp
 1 5 10 15
 Thr Ile Thr Leu Pro Ile Asp Ala Pro Gly Asp Pro Ala Tyr Pro His
 20 25 30
 Val Leu Gly Glu Ala Phe Ile Ser Pro Gln Ala Ala Leu Arg Phe Leu
 35 40 45
 Glu Asn Thr Ser Pro Asn Gln Glu Asp Ile Tyr Glu Glu Ile Ser Arg
 50 55 60
 Tyr Leu Val His Ser Ile Leu His Met Leu Gly Tyr Asp Asp Thr Ser
 65 70 75 80
 Ser Glu Glu Lys Arg Lys Met Arg Val Lys Glu Asn Gln Ile Leu Cys
 85 90 95
 Met Leu Arg Lys Lys His Ala Leu Leu Thr Ala
 100 105

<210>1201

<211>279

<212>PRT

<213>Chlamydia pneumoniae

<400>1201

Met Ser Ser Leu Leu Ser Cys Gly Arg Ile Glu Pro Thr Arg Val Thr
 1 5 10 15
 Cys Ser Leu Lys Thr Tyr Leu Glu Asp Thr Ser Gln Asn Gln Leu Ser
 20 25 30
 Thr Arg Leu Val Arg Ala Ser Val Ile Phe Leu Cys Ala Leu Leu Ile
 35 40 45
 Ile Leu Val Cys Val Ala Leu Ser Ser Leu Ile Pro Ser Ile Met Ala
 50 55 60
 Leu Ala Thr Ser Phe Thr Val Met Gly Leu Ile Leu Phe Val Met Ser
 65 70 75 80
 Leu Leu Gly Asp Val Ala Ile Ile Ser Tyr Leu Thr Tyr Ser Thr Val
 85 90 95
 Thr Ser Tyr Arg Gln Asn Lys Arg Ala Phe Glu Ile His Lys Pro Ala
 100 105 110
 Arg Ser Val Tyr Tyr Glu Gly Val Arg His Trp Asp Leu Gly Arg Ser
 115 120 125
 Ser Leu Gly Thr Gly Glu Ile Pro Ile Val Arg Thr Leu Phe Ser Pro
 130 135 140
 Phe Gln Asn His Gly Leu Asn His Ala Leu Ala Ala Lys Ile Phe Leu
 145 150 155 160
 Phe Met Glu His Phe Ser Pro Glu Pro Pro Asn Glu Pro Leu Val Asp
 165 170 175
 Trp Ala Cys Leu Ile Arg Asp Phe Arg Pro His Val Ser Ser Leu Cys
 180 185 190
 Phe Val Ile Glu Lys Gln Gly Ser Ser Leu Arg Thr Lys Glu Gly Asn
 195 200 205
 Thr Ile Cys Glu Ala Phe Arg Ser Asp Tyr Asp Ala His Phe Ala Met
 210 215 220
 Val Asp Cys Tyr Arg Leu Ile His Ser Lys Leu Ile Ile Glu Lys Met
 225 230 235 240
 Gly Leu Lys Asn Ile Asp Ile Ile Pro Ser Val Met Val Arg Glu Asp
 245 250 255
 Tyr Pro Ser Arg Pro Gly Glu Gly Tyr Arg Glu Gly Leu Leu Arg Met
 260 265 270
 Tyr Gly Gly Lys Gly Ala Leu
 275

<210>1202

<211>239

<212>PRT

<213>Chlamydia pneumoniae

<400>1202

Leu Lys Val Gln Lys Leu Arg Gln Pro Ser Phe Tyr Pro Lys Arg Leu
 1 5 10 15

Met Thr Leu Tyr Leu Gly Leu Asn Gln Lys Thr Ala Arg Lys Tyr Gln
 20 25 30
 Ala His Tyr Leu Pro Ile Leu Thr Leu Phe Pro Tyr Ala Lys Ser Thr
 35 40 45
 Pro Gln Asn Lys Arg Ala Leu Gln Phe Leu Pro Gln Ala Thr His Val
 50 55 60
 Ile Leu Thr Ser Pro Ser Ser Thr His Leu Phe Leu Ser Arg Met Thr
 65 70 75 80
 Ser Leu Leu Ser Lys Ala Thr Leu Lys Thr Lys Thr Tyr Leu Cys Ile
 85 90 95
 Gly Glu Ser Thr Lys Glu Arg Leu Leu Ser Phe Leu Gly Gln Val Lys
 100 105 110
 Tyr Val Val Ala Thr Gln Glu Ile Ala Glu Gly Ile Phe Pro Leu Leu
 115 120 125
 Gln Ala Leu Pro Ser Ser Ala Arg Ile Leu Tyr Pro His Ser Ser Leu
 130 135 140
 Ala Arg Pro Val Ile Arg Glu Phe Leu Tyr Asn Arg Phe Thr Phe Phe
 145 150 155 160
 Ser Tyr Pro His Tyr Thr Val Lys Pro Arg Lys Leu Lys Lys Asn Ile
 165 170 175
 Leu Ser Lys Tyr Lys Lys Ile Ile Phe Thr Ser Pro Ser Thr Val Arg
 180 185 190
 Ala Phe Ala Lys Ile Phe Pro Arg Phe Pro Glu Lys Thr Tyr Trp Cys
 195 200 205
 Gln Gly Arg Met Thr Leu Gln Glu Phe Gln Lys Phe Ser Ser Gln Lys
 210 215 220
 Gln Val Ser Leu Leu Glu Thr Leu Gly Lys Ser Arg Thr Ser Pro
 225 230 235

<210>1203

<211>110

<212>PRT

<213>Chlamydia pneumoniae

<400>1203

Met Ala Ser Ser Ala Thr Pro Gly Phe Asp Gly Thr Ala Pro Ser Leu
 1 5 10 15
 Phe Pro Pro Ala Thr Arg Pro Arg Tyr Asn Phe Lys Leu Ala Leu Phe
 20 25 30
 Val Thr Ile Ala Ile Ala Leu Val Trp Ile Ala Leu Ile Ala Thr Thr
 35 40 45
 Ile Ala Ile Gly Leu Cys Ile His Pro Leu Cys Ser Phe Ile Phe Leu
 50 55 60
 Thr Ala Ile Pro Leu Tyr Phe Ile Ser Arg Tyr Ile Cys Ser His Tyr
 65 70 75 80
 Ala Arg Asn Val Tyr Ile Ala Leu Asp Val Val Pro Asp His Ser Lys
 85 90 95
 Leu Gln Asp Met Arg Ser His Ser Pro Ile Phe Ser Asp Arg
 100 105 110

<210>1204

<211>196

<212>PRT

<213>Chlamydia pneumoniae

<400>1204

Met Leu Ile Leu Gly Leu Leu Thr Pro Thr Phe Gly Ser Leu Lys Thr
 1 5 10 15
 Phe Pro Ser His Ser Ala Gly Lys Gln Thr His Ser Met Ile Gly Trp
 20 25 30
 Val Pro Gln His Phe Ser Tyr Asp Pro Cys Phe Pro Ile Ser Val Lys
 35 40 45
 Asp Val Val Leu Ser Gly Arg Leu Ser Gln Leu Ser Trp His Xaa Lys
 50 55 60
 Tyr Lys Xaa Lys Asp Phe Glu Ala Val Asp His Ala Leu Asp Asn Val
 65 70 75 80
 Gly Leu Ser Asp His His His His Cys Phe Ala His Leu Ser Gly Gly
 85 90 95

Gln Ile Gln Arg Val Leu Leu Ala Arg Ala Leu Ala Ser Tyr Pro Glu
 100 105 110
 Ile Leu Ile Leu Asp Glu Pro Thr Asn Ile Asp Pro Asp Asn Gln
 115 120 125
 Gln Arg Ile Leu Ser Ile Leu Lys Lys Leu Asn Arg Thr Cys Thr Ile
 130 135 140
 Leu Met Val Thr His Asp Leu His His Thr Thr Asn Tyr Phe Asn Lys
 145 150 155 160
 Val Phe Tyr Met Asn Lys Thr Leu Thr Ser Leu Ala Asp Thr Ser Thr
 165 170 175
 Leu Thr Asp Gln Phe Cys Cys His Pro Tyr Lys Asn Gln Glu Phe Ser
 180 185 190
 Cys Ser Pro His
 195

<210>1205

<211>92

<212>PRT

<213>Chlamydia pneumoniae

<400>1205

Met Leu Ser Ser Leu Ile Arg Asp Ser Phe Pro Leu Leu Ile Leu Leu
 1 5 10 15
 Pro Thr Phe Leu Ala Ala Leu Gly Ala Ser Val Ala Gly Gly Val Met
 20 25 30
 Gly Thr Tyr Ile Val Val Lys Arg Ile Val Ser Ile Ser Gly Ser Ile
 35 40 45
 Ser His Ala Ile Leu Gly Gly Ile Gly Leu Thr Leu Trp Ile Gln Tyr
 50 55 60
 Lys Leu His Leu Ser Phe Phe Pro Met Tyr Gly Ala Ile Val Gly Ala
 65 70 75 80
 Ile Phe Leu Ala Leu Cys Ile Gly Lys Arg Ser Thr
 85 90

<210>1206

<211>188

<212>PRT

<213>Chlamydia pneumoniae

<400>1206

Leu His Arg Gln Lys Ile His Leu Lys Tyr Gln Glu Arg Glu Asp Ser
 1 5 10 15
 Leu Ile Ala Met Ile Trp Ser Val Gly Met Ala Ile Gly Ile Ile Phe
 20 25 30
 Ile Ser Arg Leu Pro Thr Phe Asn Gly Glu Leu Ile Asn Phe Leu Phe
 35 40 45
 Gly Asn Ile Leu Trp Val Thr Pro Ser Asp Leu Tyr Ser Leu Xaa Ile
 50 55 60
 Phe Asp Leu Leu Val Leu Gly Ile Val Val Leu Cys His Thr Arg Phe
 65 70 75 80
 Leu Ala Leu Cys Phe Asp Glu Arg Tyr Thr Ala Leu Asn His Cys Ser
 85 90 95
 Val Gln Leu Trp Tyr Phe Leu Leu Leu Val Leu Thr Ala Ile Thr Ile
 100 105 110
 Val Met Leu Ile Tyr Val Met Gly Thr Ile Leu Met Leu Ser Met Leu
 115 120 125
 Val Leu Pro Val Ala Ile Ala Cys Arg Phe Ser Tyr Lys Met Thr Arg
 130 135 140
 Ile Met Phe Ile Ser Val Leu Leu Asn Ile Leu Cys Ser Phe Ser Gly
 145 150 155 160
 Ile Cys Ile Ala Tyr Cys Leu Asp Phe Pro Val Gly Pro Thr Ile Ser
 165 170 175
 Leu Leu Met Gly Leu Xaa Tyr Thr Ala Ser Leu Val
 180 185

<210>1207

<211>112

<212>PRT

<213>Chlamydia pneumoniae

<400>1207

Val Phe Ser Tyr Leu Leu Leu Cys Ile Ile Leu Val Tyr Val Arg Phe
 1 5 10 15
 Met Tyr Glu Gly Lys Ser Arg Met Ala Ser Pro Thr Pro Gly Gln Leu
 20 25 30
 His Leu Gln Gln Lys Val Glu Ser Lys Ala Tyr Asp Tyr Ser Arg Ser
 35 40 45
 Leu Ala Met Ile Ala Thr Ala Leu Leu Phe Phe Ile Val Ala Leu Ile
 50 55 60
 Leu Ser Gly Leu Ser Leu Leu Pro Gln Val Phe Leu Pro Phe Ser Gly
 65 70 75 80
 Ala Tyr Phe Ile Ile Gly Ser Phe Leu Ala Phe Ile Ala Leu Gly Ile
 85 90 95
 Leu Leu Ile Asn Cys Val Cys Asp Leu Lys Gln Tyr Leu Thr Ser Ser
 100 105 110

<210>1208

<211>320

<212>PRT

<213>Chlamydia pneumoniae

<400>1208

Val Leu Ile Ser Ile Ser Leu Ala Thr Leu Pro Ile Leu Ala Phe Ser
 1 5 10 15
 Trp Ala Ser Phe Ile Glu Pro Asn Trp Leu Arg Thr Thr Ala Ile Pro
 20 25 30
 Trp Arg Leu Pro Lys Lys His Ala His Leu His Gly Leu Arg Ile Ala
 35 40 45
 Gln Ile Ser Asp Leu His Phe His Lys Arg Val Pro Glu Lys Phe Leu
 50 55 60
 Asn Lys Val Ser Lys Ser Ile Lys Asn Phe Ser Pro Asp Leu Ile Val
 65 70 75 80
 Phe Cys Gly Asp Leu Leu Cys Arg Ala Arg Leu Glu Asp Lys Glu Arg
 85 90 95
 Leu Glu Thr Phe Leu Asn Thr Leu Glu Ala Pro Leu Gly Val Phe Ala
 100 105 110
 Ile Leu Gly Asn His Asp Tyr Ser Ser Tyr Ile Ser Arg Asn Thr Lys
 115 120 125
 Gly Glu Ile Thr Cys Ile Pro Glu Glu Lys Ser Arg Pro Ile Gln Arg
 130 135 140
 Ala Ile Ile Ala Val Met Gln Gly Leu Phe Ser Ser Pro Ser Tyr Arg
 145 150 155 160
 Tyr Asp Pro Asn Leu Thr Pro Gln Glu Pro His Pro Asp Leu Leu Lys
 165 170 175
 Leu Leu Lys Asn Thr Pro Leu Thr Leu Leu His Asn Thr Thr His Val
 180 185 190
 Ile Pro Asn Thr Leu Asn Ile Val Gly Leu Gly Asp Leu Phe Ala Arg
 195 200 205
 Gln Phe His Pro Glu Gln Ala Phe Lys Asn Tyr Asp Pro Ser Leu Pro
 210 215 220
 Gly Leu Leu Leu Ser His Asn Pro Asp Gly Ile Thr Arg Leu Gln Gln
 225 230 235 240
 Tyr Pro Gly Asp Phe Val Leu Ser Gly His Ser His Gly Pro Gln Val
 245 250 255
 Thr Leu Ser Trp Pro Lys Phe Ala Arg Lys Phe Phe Glu Arg Leu Ser
 260 265 270
 Gly Leu Glu Asn Pro Tyr Leu Ala Arg Gly Tyr Phe Val Thr Lys Glu
 275 280 285
 Gly Lys Gln Leu Tyr Val Asn Arg Gly Leu Gly Gly Leu Lys Arg Ile
 290 295 300
 Arg Phe Cys Ser Pro Pro Glu Ile Cys Tyr Ile Thr Cys Ser Tyr Asp
 305 310 315 320

<210>1209

<211>185

<212>PRT

<213>Chlamydia pneumoniae

<400>1209

Met Thr Ala Thr Met Ser Leu Leu Asn Leu Pro Ser Ser Gln Asp Ser
 1 5 10 15
 Ala Ser Glu Asp Ser Thr Ser Gln Ser Gln Ile Phe Asp Pro Ile Arg
 20 25 30
 Asn Arg Glu Leu Val Ser Thr Pro Glu Glu Lys Val Arg Gln Arg Leu
 35 40 45
 Leu Ser Phe Leu Met His Lys Leu Asn Tyr Pro Lys Lys Leu Ile Ile
 50 55 60
 Ile Glu Lys Glu Leu Lys Thr Leu Phe Pro Leu Leu Met Arg Lys Gly
 65 70 75 80
 Thr Leu Ile Pro Lys Arg Arg Pro Asp Ile Leu Ile Ile Thr Pro Pro
 85 90 95
 Thr Tyr Thr Asp Ala Gln Gly Asn Thr His Asn Leu Gly Asp Pro Lys
 100 105 110
 Pro Leu Leu Leu Ile Glu Cys Lys Ala Leu Ala Val Asn Gln Asn Ala
 115 120 125
 Leu Lys Gln Leu Leu Ser Tyr Asn Tyr Ser Ile Gly Ala Thr Cys Ile
 130 135 140
 Ala Met Ala Gly Lys His Ser Gln Val Ser Ala Leu Phe Asn Pro Lys
 145 150 155 160
 Thr Gln Thr Leu Asp Phe Tyr Pro Gly Leu Pro Glu Tyr Ser Gln Leu
 165 170 175
 Leu Asn Tyr Phe Ile Ser Leu Asn Leu
 180 185

<210>1210

<211>173

<212>PRT

<213>Chlamydia pneumoniae

<400>1210

Met Ala Asp Asp Thr Leu Ile Pro Lys Leu Met Lys Asn Ser Leu Ser
 1 5 10 15
 Gln Ala Cys Ser Glu Gly Leu Leu Ile Ala Lys Tyr Pro Pro Leu Gln
 20 25 30
 Val Ile Val His Phe Asp Asn Asn Leu Val Val Lys Thr His Leu Ser
 35 40 45
 Val Ala Pro Val Phe Ser Cys Leu Phe Leu Gly Pro Ala Ala His Lys
 50 55 60
 Ala Met Gln Glu Ile Val Leu Trp Cys Ser Arg Tyr Ala Asn Lys Glu
 65 70 75 80
 His Pro Pro Phe Ser Ser His Phe Ala Lys Asp Leu Ile Pro Ser Gln
 85 90 95
 Tyr Leu Glu Ile Leu Asn Cys Val Ala Glu Ile Pro Phe Gly Glu Gln
 100 105 110
 Gln Thr Tyr Ala Glu Ile Ala Lys Lys Thr Asp Thr His Pro Arg Thr
 115 120 125
 Val Gly Ala Ala Cys Lys Gln Asn Pro Phe Leu Leu Phe Phe Pro Cys
 130 135 140
 His Arg Val Val Gly Ser His Gly Glu Arg Asn Tyr Val Leu Gly Pro
 145 150 155 160
 Val Ile His Glu Ile Leu Leu Lys Phe Glu Asn Ser Tyr
 165 170

<210>1211

<211>137

<212>PRT

<213>Chlamydia pneumoniae

<400>1211

Met Ile Glu Asn Asp Phe Pro Glu Ala Ser Asn Phe Glu Ser Ser His
 1 5 10 15
 Phe Tyr Arg Asp Lys Val Gly Val Ile Ile Leu Cys Gly Gly Glu Gly
 20 25 30
 Lys Arg Leu Ser Pro Leu Thr Asn Cys Arg Cys Lys Pro Thr Val Ser
 35 40 45
 Phe Gly Gly Arg Tyr Lys Leu Ile Asp Ile Pro Ile Ser His Ala Ile

50 55 60
 Ser Ala Gly Phe Ser Lys Ile Phe Val Ile Gly Gln Tyr Leu Thr Tyr
 65 70 75 80
 Thr Leu Gln Gln His Leu Phe Lys Thr Tyr Phe Tyr His Gly Val Leu
 85 90 95
 Gln Asp Gln Ile His Leu Leu Ala Pro Glu Ala Arg Gln Gly Asp Gln
 100 105 110
 Ile Trp Tyr Gln Gly Thr Gln Met Gln Phe Glu Lys Thr Tyr Phe Ile
 115 120 125
 Ser Lys Ile Gln Lys Ser Asn Thr Phe
 130 135

<210>1212

<211>94

<212>PRT

<213>Chlamydia pneumoniae

<400>1212

Met Leu Ile Arg Leu Phe Leu Gly Ile Ser Leu Pro Lys Gly Phe Pro
 1 5 10 15
 Leu Tyr Leu Glu Pro Pro Leu Val Leu Ala Thr Phe Gln Gly Thr Gln
 20 25 30
 Phe Val Gly Thr Tyr Ser Glu Ala Thr Asn Pro Leu Tyr Ile Asp Asn
 35 40 45
 Leu Asn Leu Asn Tyr His Tyr Thr Gln Glu Leu Leu Tyr Lys Ala Val
 50 55 60
 Pro Cys Asn Tyr Lys Ser Ile Tyr Arg Glu Ile Pro Leu Ile Ile Phe
 65 70 75 80
 Pro Glu Val Leu Ile Gly Ser Thr Pro Thr Gln Ser Thr Glu
 85 90

<210>1213

<211>168

<212>PRT

<213>Chlamydia pneumoniae

<400>1213

Met Arg Gln Phe Cys Asn Leu Leu Ser Leu Ser Arg Leu Trp Leu Ala
 1 5 10 15
 Leu Tyr Phe Cys Gln Glu Lys Leu His Ile Arg Leu Leu Ala Ile Val
 20 25 30
 Gly Ala Met Leu Ser Asp Val Leu Asp Gly Tyr Leu Ala Arg Arg Tyr
 35 40 45
 Lys Ala Thr Ser Arg Leu Gly Ser Ile Leu Asp Pro Ile Thr Asp Lys
 50 55 60
 Val Phe Val Phe Val Cys Ile Thr Val Leu Tyr Met Glu Gly Ser Leu
 65 70 75 80
 Ser Ile Ala His Leu Phe Phe Ile Cys Ala Arg Asp Leu Phe Leu Xaa
 85 90 95
 Thr Phe Val Phe Tyr Leu Ser Leu Val Lys Gly Trp Lys Gly Tyr Asp
 100 105 110
 Tyr Gly Ser Leu Phe Trp Gly Lys Ile Phe Thr Val Val Gln Phe Ile
 115 120 125
 Ile Leu Leu Gly Val Thr Ala Gly Gly Glu Ile Pro Trp Thr Gly Leu
 130 135 140
 Val Pro Leu Val Ala Leu Gly Phe Leu Tyr Phe Leu Glu Arg Ile Met
 145 150 155 160
 Asp Tyr Lys Lys Gln Phe Leu Arg
 165

<210>1214

<211>88

<212>PRT

<213>Chlamydia pneumoniae

<400>1214

Met Ser Arg Ser Leu Arg Lys Gly Pro Phe Val Asp His His Leu Leu
 1 5 10 15
 Lys Lys Val Arg Ala Met Asn Ile Glu Glu Lys Lys Thr Pro Ile Lys
 20 25 30

Thr Trp Ser Arg Arg Ser Met Ile Thr Pro Glu Met Ile Gly His Thr
 35 40 45
 Phe Glu Val His Asn Gly Lys Lys Phe Leu Thr Val Phe Val Ser Glu
 50 55 60
 Thr Met Val Gly His Lys Leu Gly Glu Phe Ser Pro Thr Arg Ile Phe
 65 70 75 80
 Lys Ser His Pro Val Lys Lys Gly
 85

<210>1215

<211>252

<212>PRT

<213>Chlamydia pneumoniae

<400>1215

Met Leu Ile Val Leu Ala Phe Arg Gln Val Phe Phe Ser His Ser Arg
 1 5 10 15
 Ser Gln Leu Asp Arg Leu Lys Asn Tyr Leu Arg Leu Leu Lys Gln Asn
 20 25 30
 Phe Ala Ile Thr Leu Pro Lys Glu Arg Thr Ser Lys Gly His Ser Leu
 35 40 45
 Met Leu Thr Phe Asp Phe Ala Ser Phe Asp Phe Tyr Thr Asn Ile Phe
 50 55 60
 Pro Phe Leu Glu Glu Gln Lys Ile Pro Ala Val Val Gly Val Ala Ser
 65 70 75 80
 Arg Tyr Ile Pro Ser Asn Ala Ala Gln Asp Leu His Pro Ser His Arg
 85 90 95
 Leu Lys Pro Ser Glu Thr Leu Ala Phe Gln Asp Glu Ile Phe Ser Asn
 100 105 110
 Tyr Met Pro Phe Cys Cys Gln Asn Glu Leu Ile Glu Met Ala Lys Ser
 115 120 125
 Pro Tyr Ile Gln Leu Ala Ser Ser Gly Phe Ala Ile Arg Asn Leu Met
 130 135 140
 Asn Asn Pro Pro Tyr Leu Thr Thr Glu Ile Leu Leu Ser Arg His His
 145 150 155 160
 Ile Glu Thr Ile Thr Gly Ala Lys Pro Leu Ala Phe Leu Phe Pro Phe
 165 170 175
 Gly Lys Ser Asp Pro Thr Ser Arg Lys Leu Ala Ala Asp His Tyr Pro
 180 185 190
 Tyr Ser Phe Leu Leu Gly Asn Thr Ile Asn Arg Lys Leu Lys Thr His
 195 200 205
 Asn Ile Tyr Arg Leu Asp Ile Lys Pro Met Gln Tyr Val Cys Pro Ser
 210 215 220
 Leu Phe Gln Ser Ser Arg Tyr Leu Lys Asn Trp Ile Lys Glu Lys Ser
 225 230 235 240
 Lys Gln Leu Tyr Leu Lys Lys Gln Leu Pro Lys Arg
 245 250

<210>1216

<211>149

<212>PRT

<213>Chlamydia pneumoniae

<400>1216

Met Ala Asp Leu Glu Val Phe Gln Ala Asp Phe Ala Leu Leu Phe Glu
 1 5 10 15
 Ala Gly Leu Leu Ala Ile Lys Gln Gly Asp Glu Asp Ser Ala Arg Lys
 20 25 30
 Leu Phe Gln Ser Leu His Ile Leu Asn Pro Asn His Tyr Gly His Asp
 35 40 45
 Leu Gly Leu Ala Leu Ile Ser Leu His Lys Met Asp Leu Phe Asp Ala
 50 55 60
 Glu Glu Arg Leu Ser Ala Leu Ile Lys Gly Asn Glu Asp Asn Trp Ser
 65 70 75 80
 Ile Lys Ala Phe Leu Ser Leu Thr His Met Leu Ile Val Leu His Gln
 85 90 95
 Gly Ser Ser Phe Glu Val Arg Arg Glu Ser Leu Glu Ser Cys Leu Lys
 100 105 110

Phe Ala Asp Gln Val Ile Ala Asn Cys Lys Ile Glu Ser Thr Arg Ala
 115 120 125
 Leu Ala Gln Ser Val Leu Asp Trp His Asp Thr Leu Val Ala Lys Ser
 130 135 140
 Ala Gly Pro Leu Gly
 145
 <210>1217
 <211>75
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1217
 Met Phe Phe Ala Pro Leu Leu Tyr Glu Ser Leu Arg Arg Gly Leu Met
 1 5 10 15
 His Pro Thr Ser His Met Gln Gln Gln Leu Ala Arg Leu Glu Phe Ile
 20 25 30
 Asn Asp Gln Leu Thr Thr Glu Leu Glu His Val Asn Glu Leu Leu Cys
 35 40 45
 Ser Leu Gly Phe Pro Glu Gly Leu Thr Thr Ile Lys Ala Ile Ala Glu
 50 55 60
 Glu Val Leu Ser Asp Asp Glu Pro Leu Leu Asp
 65 70 75
 <210>1218
 <211>467
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1218
 Leu Pro Ser Asn Arg Lys Asn Ala Lys Arg Asn Leu Tyr Lys Leu Ser
 1 5 10 15
 Phe Ile Ile Val Arg Lys Cys Val Val Thr Ser Ala Leu Asn Asp Phe
 20 25 30
 Phe Leu Thr Glu Thr Val Met Asn Ala Thr Lys His Cys Arg Ala Ser
 35 40 45
 Phe Ser Asn Ser Pro Arg His Leu Leu Ala Gln Leu Ala Glu Asp Ile
 50 55 60
 Thr Ser Thr His Gln Lys Pro Phe Thr Lys Arg Trp Ile Leu Val Ala
 65 70 75 80
 Asn Ala Thr Thr Gly His Trp Ile Lys Asn Gln Leu Val His Val Leu
 85 90 95
 Ser Asp His Ile Phe Met Gly Ser Thr Ile Phe Thr Ala Ser Asp Ser
 100 105 110
 Ile Val Lys His Leu Phe Leu Gly Ser Gly Cys Ser Gln Pro Asn Ile
 115 120 125
 Pro Asp Tyr Leu Thr Leu Pro Leu Leu Ile Asn Asn Ile Leu Glu Glu
 130 135 140
 Ile Ser Lys Ala Ser Lys Phe Glu Asn Gly Arg Glu Phe Leu Ser Pro
 145 150 155 160
 Pro Thr Tyr Gly Thr Thr Lys Lys Leu Ala Ala Ala Phe Lys Gln Phe
 165 170 175
 His Thr Phe Ser Gln Arg Pro Thr Lys Asn Ala Ser His Tyr Gln Glu
 180 185 190
 Leu Phe Gln Ile Leu Glu Ser His Phe Ser Ser Tyr Glu Glu Met Phe
 195 200 205
 Thr Thr Ile Leu Asn Asn Arg Thr Gln Glu Glu Asp Cys Ser Leu His
 210 215 220
 Ile Phe Gly Tyr Ala His Leu Pro Lys His Leu Ala Glu Phe Phe Ile
 225 230 235 240
 Asn Leu Ser Thr Tyr Phe Pro Val Tyr Phe Tyr Cys Phe Ser Pro Cys
 245 250 255
 Arg Glu Tyr Phe Gly Asp Leu Leu Ser Asp Arg Ala Ile Asp Phe Phe
 260 265 270
 Trp Asn Gln Leu Pro Asp Ser Pro Ile Lys Asn Ala Trp Glu His Tyr
 275 280 285
 Val Leu Ser Asp Arg Gln Ala Leu Leu Ala Asn Leu Ala His Lys Ser
 290 295 300

Gln Ser Ser Gln Asn Phe Phe Leu Asp Arg Glu Ile Asp Tyr Gln Glu
 305 310 315 320
 Met Phe Leu Pro Ser Lys His Asp Ser Ser Leu Gly Val Ile Gln Asn
 325 330 335
 Ser Ile Leu Asp Leu Lys Pro Thr Ser Pro Gln Asp Phe Ser Gln Thr
 340 345 350
 Lys Gln Thr Ile Cys Ile Tyr Arg Ala Leu Asn Ile Pro Arg Glu Val
 355 360 365
 Gln Glu Val Phe Cys Lys Val Thr Glu Leu Leu His Arg Gly Val Ser
 370 375 380
 Pro Glu Glu Ile Phe Ile Leu Ser Ser His Ile Glu Ser Tyr Lys Val
 385 390 395 400
 His Leu Asn Ala Ile Phe Asn Pro His Val Pro Ile Tyr Phe Thr Asp
 405 410 415
 Glu Val Asp Pro Arg Ala Glu Asp Leu Arg Asn Lys Asn Pro Pro Thr
 420 425 430
 Phe Phe Tyr Phe Thr Asn Thr Arg Gly Phe Thr Leu His Ser Ser Thr
 435 440 445
 Pro Tyr Ala Pro Thr Thr Thr Thr Tyr Arg Ser Lys Gln Gly Ser
 450 455 460
 Leu Ser Asp
 465

<210>1219

<211>81

<212>PRT

<213>Chlamydia pneumoniae

<400>1219

Leu Glu Ala Pro Met Asn Glu Gly Ile His Ser Val Cys Phe Gln Lys
 1 5 10 15
 Thr Pro Arg Leu Thr Ala Lys Ser Val Val Ser Met Glu Met Leu Leu
 20 25 30
 Thr Thr Gln Gln Leu Pro Ser Ala Glu Gly Met Pro Ser Val Ala Asn
 35 40 45
 Leu Glu Ala Asp Phe Leu Arg Ala Glu Ala Leu Leu Ala Glu Met Arg
 50 55 60
 Glu Ile Arg Gly Cys Leu Glu Gln Ser Leu Arg Thr Leu Val Pro Ser
 65 70 75 80
 Glu

<210>1220

<211>95

<212>PRT

<213>Chlamydia pneumoniae

<400>1220

Met Met Lys Tyr Leu Pro Tyr Ile Ala Ile Thr Ala Cys Ile His Gly
 1 5 10 15
 Gly Ile Leu Leu Leu Val Phe Ala Ser Pro Leu Pro Lys Lys Arg Leu
 20 25 30
 Gln Pro Lys Ala Phe Gln Glu Lys Leu Val Thr Ile Gln Pro Lys Pro
 35 40 45
 Pro Val Pro Thr Pro Ser Val Val Val Asp Pro Ala Lys Thr Ile Arg
 50 55 60
 Pro Ser Val Leu Arg Ser His Lys Asn Lys Leu Asn Ala Ala Leu Leu
 65 70 75 80
 Lys Arg Thr Ser Arg Arg Leu Tyr Lys Asn Pro Phe Gln Lys Leu
 85 90 95

<210>1221

<211>96

<212>PRT

<213>Chlamydia pneumoniae

<400>1221

Leu Asn Lys Phe Lys Thr Tyr Leu Gln Thr Ala Leu Ile Ala Pro Phe
 1 5 10 15
 Phe Ser Phe Pro Ala Leu Ser Gly Ser Phe Ser Ser Ile Gln Ala Glu

20 25 30
 Glu Ile Xaa Gln Gln Val Asn His Pro Gly Ala Glu Leu Leu Ser Glu
 35 40 45
 Gly Ser Tyr Ile Pro Gly Leu Gln Thr Phe Arg Leu Gly Ile Lys Ile
 50 55 60
 Tyr Ser Phe Gln Arg Glu Pro Tyr Leu Leu Glu Glu Ser Arg Arg Asn
 65 70 75 80
 Trp Lys Ser Ser Gln Asn Phe Leu Ala Val Ala Glu Arg Phe Arg Gly
 85 90 95

<210>1222

<211>76

<212>PRT

<213>Chlamydia pneumoniae

<400>1222

Val Arg Ala Leu Phe Arg Ser Gly Tyr Lys Gly Arg Gln Gly Ile Tyr
 1 5 10 15
 Glu Phe Leu Arg Pro Asn Thr Leu Phe Arg Ser Glu Val Ala Ser Asn
 20 25 30
 Arg Pro Tyr His Ile Leu Arg Glu Thr Ala Glu Gln Asn Gly Phe Leu
 35 40 45
 Pro Ile Leu Glu His Gly Ile Ala Leu Ala Val Ser Gly Glu Thr Thr
 50 55 60
 Leu Ala Glu Val Leu Arg Val Thr Lys Arg Cys Asp
 65 70 75

<210>1223

<211>185

<212>PRT

<213>Chlamydia pneumoniae

<400>1223

Val Pro Thr Leu Ala Lys Ser Phe Tyr Ile Asn Ile Arg Asp Ser Arg
 1 5 10 15
 Phe Tyr Ser Trp Leu Cys Phe Ile Met Lys Glu Thr Tyr Tyr Arg Asp
 20 25 30
 Phe Leu His Glu Asn Tyr Leu Lys Asn Lys Lys Ser Met Phe Met Lys
 35 40 45
 Ile Tyr Lys Thr Ala Gly Glu Phe Phe Leu Ala Asn Ala Lys Trp Pro
 50 55 60
 Leu Val Pro Ala Gly Tyr Arg Arg Val Arg Gly Lys Asp Phe Val Leu
 65 70 75 80
 Ser Pro Leu Val Asp Leu Val Ile Leu Phe Pro Trp Val Thr Lys Asp
 85 90 95
 Ser Arg Tyr Ser Pro Cys Ser Met Thr Phe Thr Cys Ile Cys Arg Ser
 100 105 110
 Ile Val Glu Cys Ile Pro Val Val Ser Thr Leu Phe Gly Ile Gly Arg
 115 120 125
 Phe Cys Ala Val Trp Cys Val Glu Gly Phe Ser Gly Ser Thr Phe Asp
 130 135 140
 Lys Ile Tyr His Thr Ile Val Ala Val Leu Gly Ile Leu Gly Leu Gly
 145 150 155 160
 Ile Leu Thr Phe Ile Leu Arg Ile Ile Phe Ser Val Leu Met Leu Pro
 165 170 175
 Val Trp Phe Leu Phe Lys Cys Tyr Ser
 180 185

<210>1224

<211>75

<212>PRT

<213>Chlamydia pneumoniae

<400>1224

Met Trp Trp Asn Pro Ala Val Glu Asn Gln Ala Thr Asp Arg Val His
 1 5 10 15
 Arg Ile Gly Gln Ser Arg Ser Val Ser Ser Tyr Lys Leu Val Thr Leu
 20 25 30
 Asn Thr Ile Glu Glu Lys Ile Leu Thr Leu Gln Asn Arg Lys Xaa Ser
 35 40 45

Leu Val Lys Lys Val Ile Asn Ser Asp Asp Glu Val Val Ser Lys Leu
 50 55 60
 Thr Trp Glu Glu Val Leu Glu Leu Leu Gln Ile
 65 70 75

<210>1225

<211>122

<212>PRT

<213>Chlamydia pneumoniae

<400>1225

Met Arg Asp Arg Leu Gly Ser Leu Ser Leu Ile Leu Lys Val Lys Ile
 1 5 10 15
 His Lys Tyr Leu Asp Thr Leu His Asn Gln Lys Arg Leu Ala Leu Thr
 20 25 30
 Val Ser Arg Asn Ile Gln Ala Thr Asn Lys Arg Ile Ala Asp Leu His
 35 40 45
 Leu Glu Arg Tyr Glu His Phe Ile Ser Arg Asp Asn Ile Lys His Tyr
 50 55 60
 Asp Ile Leu Leu Glu Tyr Leu Lys Thr Leu Gln Ser Ser Leu Tyr Lys
 65 70 75 80
 Gln Gln Ser Glu Ser Leu Arg Phe Leu Glu Ile His His Gln Gln Leu
 85 90 95
 Gln Glu Leu Ile Asn Arg Arg Lys Ile Ile Glu Lys Ile Lys Asn Asn
 100 105 110
 Lys Tyr Ser Lys Asp Gln Glu Ile Gly Thr
 115 120

<210>1226

<211>178

<212>PRT

<213>Chlamydia pneumoniae

<400>1226

Val Thr Thr Pro Gln Ser Pro Gly Ser Leu Ser Gln Ser His Leu Pro
 1 5 10 15
 His Pro His Asp Pro Trp Asp Thr Glu Pro Thr Ser Leu Xaa Glu Xaa
 20 25 30
 Pro Asn Asp Lys Ala Ser Gln Glu Leu His Ser Leu Val His Leu Phe
 35 40 45
 Arg Lys Leu Ser Ile His Leu Leu Ser Glu Val Glu Lys Thr Val Gln
 50 55 60
 Gln Leu Lys Pro Asp Leu Leu Glu Leu Ala Leu Leu Ile Cys Glu Lys
 65 70 75 80
 Phe Leu Tyr Lys Lys Leu Glu Asn Pro Gln Glu Leu Ala Leu Leu Leu
 85 90 95
 Ser Thr Ala Leu Gln Arg His Thr Thr Leu Arg Ser Leu Thr Pro Ile
 100 105 110
 Lys Val Phe Leu His Pro Glu Asp Leu Lys Thr Leu Thr Asp Trp Ile
 115 120 125
 Ser Thr His Glu Leu Pro Met Ile Lys His Ala Glu Phe Phe Pro Asp
 130 135 140
 Thr Ser Cys Arg Arg Ser Gly Phe Lys Ile Glu Thr Pro Asn Gly Ile
 145 150 155 160
 Leu Arg Gln Glu Ile Ser Glu Glu Leu Asp His Leu Leu Ser Val Leu
 165 170 175
 Thr Ala

<210>1227

<211>161

<212>PRT

<213>Chlamydia pneumoniae

<400>1227

Leu Leu Leu Arg Tyr His Ala Lys Ala Glu Lys Pro Thr Leu Gln Leu
 1 5 10 15
 Thr Leu Asn Glu Asn Tyr Ile Ala His Leu Thr Lys Glu Glu Ser Glu
 20 25 30
 Lys Ile Val Ala His Thr Lys His Tyr Leu Leu Ser Asn Xaa Asp Asp

PCT/IB98/01890

Ile Ala Ala Tyr Glu Glu Ala Val Glu Lys Tyr Leu Lys Leu Arg Gln
 65 70 75 80
 Arg Ala Pro Leu Arg Leu Ala Ser Lys Leu Phe Arg Phe Leu Asp Val
 85 90 95
 Pro Ser Ile Arg Phe Ser Ser
 100

<210>1231

<211>94

<212>PRT

<213>Chlamydia pneumoniae

<400>1231

Ser Ile Ala Thr Gly Glu Thr Met Leu Tyr Phe Ile Glu Gln Leu Asn
 1 5 10 15
 Lys Leu Ser Thr Ser Phe Cys Val Phe Pro Met Ile Leu Leu Gly
 20 25 30
 Gly Phe Leu Thr Trp Lys Leu Arg Gly Leu Gln Phe His Gly Leu Lys
 35 40 45
 Leu Gly Phe Asn Leu Met Leu Gln Asn Lys Leu Asp Asp Ser Ser Ser
 50 55 60
 Lys Ala Asn Glu Val Ser Ser Tyr Glu Ala Val Ala Gly Ile Leu Ala
 65 70 75 80
 Gly Asn Phe Gly Thr Gly Asn Ile Ala Gly Met Leu Ser Pro
 85 90

<210>1232

<211>240

<212>PRT

<213>Chlamydia pneumoniae

<400>1232

Val Pro Asn Arg His Val Asp Met Asn Ser Trp Trp Arg Ser Ala Cys
 1 5 10 15
 Tyr Pro Arg Ser Thr Phe Tyr Pro Leu Ser Asp Gly Asp Ser Thr Phe
 20 25 30
 His Arg Arg Ile Thr Lys Pro Asp Phe Arg Leu Cys Ser Thr Cys Lys
 35 40 45
 Ser Cys Ser Gln Pro Ile Leu Tyr Leu Tyr Ala Leu Leu Val Ile Ala
 50 55 60
 Asn His Asp Glu Ile Ser Phe Gly Leu Leu Arg Tyr Phe Leu Gly Gly
 65 70 75 80
 Tyr Arg Pro Ser Lys Thr Ala Arg Leu Ala Met Ser Ile Leu Gln Ile
 85 90 95
 His Gly Val Met Leu Asp Ser Gln Leu Val Lys Thr Ser Ile Ser Thr
 100 105 110
 Met Thr Pro Thr Leu Leu Thr Lys Ser Val His Ser Leu Leu Ala Ile
 115 120 125
 Leu His Ile Thr Asn Gln Lys Ser Ile Pro Lys Tyr Ser Lys Gly Ser
 130 135 140
 Arg Gly Leu Phe Val Leu Leu Arg Val Asn Ser Ile Phe Thr Ala Thr
 145 150 155 160
 Thr Ile Ser Pro Ser Leu Ser Leu Arg Gln Cys Pro Asp Arg Tyr Thr
 165 170 175
 Ile Arg Ala Gly Arg Asn Leu Pro Asp Lys Glu Phe Arg Tyr Leu Ser
 180 185 190
 Thr Val Ile Val Thr Ala Ala Ile His Gln Gly Leu Gly Ser Met Leu
 195 200 205
 Ser Leu Arg Leu Thr Tyr Pro Phe Asn Leu Leu Ala Leu Gly Arg Arg
 210 215 220
 His Thr Ile Tyr Phe Pro Leu Glu Val Cys Ile Val Leu Cys Phe Cys
 225 230 235 240

<210>1233

<211>133

<212>PRT

<213>Chlamydia pneumoniae

<400>1233

Leu Asn Phe Val Ser Thr Leu Thr Gly Ser Asp Phe Tyr Ala Pro Val

1 5 10 15
 Leu Glu Lys Leu Glu Glu Ala Phe Ala Asp Thr Thr Gly Gln Ala Ile
 20 25 30
 Leu Phe Ser Ser Ser Pro Asp Phe Ile Val His Pro Ile Ala Gln Gln
 35 40 45
 Leu Gly Ile Ser Ser Trp Tyr Ala Ser Cys Tyr Arg Asp Gln Ser Ala
 50 55 60
 Glu Gln Thr Ile Tyr Lys Lys Cys Leu Thr Gly Asp Lys Lys Ala Gln
 65 70 75 80
 Ile Leu Ser Tyr Ile Lys Lys Ile Asn Gln Ala Arg Ser His Thr Phe
 85 90 95
 Ser Asp His Ile Leu Asp Leu Pro Phe Leu Met Leu Gly Glu Glu Lys
 100 105 110
 Thr Val Val Arg Pro Gln Gly Arg Leu Lys Lys Met Ala Lys Lys Tyr
 115 120 125
 Tyr Trp Asn Ile Val
 130

<210>1234

<211>118

<212>PRT

<213>Chlamydia pneumoniae

<400>1234

Val Ile Leu Leu Gln Asn Ile Lys Arg Cys Ser Leu Lys Gln Leu Lys
 1 5 10 15
 Val Leu Ala Thr Leu Leu Ser Leu Ser Leu Pro Thr Leu Glu Ala
 20 25 30
 Ala Glu Asn Arg Asp Ser Asp Ser Ile Val Trp His Leu Asp Tyr Gln
 35 40 45
 Glu Ala Leu Gln Lys Ser Lys Glu Ala Glu Leu Pro Leu Leu Val Ile
 50 55 60
 Phe Ser Gly Ser Asp Trp Asn Gly Pro Cys Met Lys Ile Arg Lys Glu
 65 70 75 80
 Val Leu Glu Ser Pro Glu Phe Ile Lys Arg Val Gln Gly Lys Phe Val
 85 90 95
 Cys Val Glu Val Glu Tyr Leu Lys His Arg Pro Gln Leu Lys Thr Phe
 100 105 110
 Val Ser Lys Ile Leu Leu
 115

<210>1235

<211>87

<212>PRT

<213>Chlamydia pneumoniae

<400>1235

Met Lys Ser Phe Lys Phe Leu Leu Pro Phe Leu Ser Val Ile Leu Cys
 1 5 10 15
 Cys Gly Asn Leu Leu Ser Ser Pro Arg Ser Arg Ala Ile Ser Val Thr
 20 25 30
 Glu Ser Ile Gly Met Ser Ala Val Lys Thr Leu Val Leu Ser Glu Lys
 35 40 45
 Ala His Glu Phe Leu Glu Gly Ile Gly Tyr Gly Val Gly Ala Ser Ser
 50 55 60
 Ile Leu Arg Asp Trp Gln Thr Gln Gln Trp Leu Glu Ile Glu Ser Leu
 65 70 75 80
 Leu Ala Gln Asn Glu Val Met
 85

<210>1236

<211>141

<212>PRT

<213>Chlamydia pneumoniae

<400>1236

Met Gln Tyr Phe Ser Pro Ala Lys Leu Asn Leu Phe Leu Lys Ile Trp
 1 5 10 15
 Gly Lys Arg Phe Asp Asn Phe His Glu Leu Thr Thr Leu Tyr Gln Ala
 20 25 30

Ile Asp Phe Gly Asp Thr Leu Ser Leu Lys Asn Ser Met Lys Asp Ser
 35 40 45
 Leu Ser Ser Asn Val Asn Glu Leu Leu Ser Pro Ser Asn Leu Ile Trp
 50 55 60
 Lys Ser Leu Glu Ile Phe Arg Arg Glu Thr Gln Ile His Gln Pro Val
 65 70 75 80
 Ser Trp His Leu Asn Lys Ser Ile Pro Leu Gln Ser Gly Leu Gly Gly
 85 90 95
 Gly Ser Ser Asn Ala Ala Thr Ala Leu Tyr Ala Leu Asn Glu His Phe
 100 105 110
 Gln Thr His Ile Pro Ile Thr Thr Leu Gln Leu Trp Ala Arg Glu Ile
 115 120 125
 Gly Ser Asp Val Pro Phe Phe Leu Gln Glu Gln His
 130 135 140

<210>1237

<211>174

<212>PRT

<213>Chlamydia pneumoniae

<400>1237

Leu Gly Ser Arg Asn Arg Lys Arg Cys Ser Phe Phe Phe Ser Ser Gly
 1 5 10 15
 Thr Ala Leu Gly Lys Gly Arg Gly Glu His Leu Phe Ser Ile Lys Lys
 20 25 30
 Leu Asn His Lys His Lys Tyr Val Leu Tyr Leu Asp His Gln Gly Ile
 35 40 45
 Pro Thr Glu Lys Ala Tyr Gln Ser Leu Leu Pro Gln Asp Tyr Ser Thr
 50 55 60
 Gly Asn His Asn Ala Cys Phe Tyr Gly Glu Asn Asp Leu Glu Lys Ser
 65 70 75 80
 Val Phe Arg Ile Arg Thr Asp Leu Lys Asn Lys Lys His Met Leu Glu
 85 90 95
 Arg Met Trp Ser Pro Phe Glu Ser His Val Leu Met Ser Gly Ser Gly
 100 105 110
 Ala Thr Leu Phe Val Cys Tyr Leu Glu Glu Leu Glu Gln Asp Ser Lys
 115 120 125
 Val Ser Ser Gln Ile His Ser Leu Ile Lys Gln Thr Gln Gly Ile Pro
 130 135 140
 Val Ser Arg Leu Tyr Arg Glu Pro His Trp Tyr Ser Leu Lys Gln Ser
 145 150 155 160
 Thr Tyr Lys Asn Ser Pro Leu Glu Cys Phe Gln Pro Gln Ile
 165 170

<210>1238

<211>106

<212>PRT

<213>Chlamydia pneumoniae

<400>1238

Met Gly Leu Tyr Asp Arg Asp Tyr Ile Gln Asp Ser Arg Val Gln Gly
 1 5 10 15
 Thr Phe Ala Ser Arg Val Tyr Gly Trp Met Thr Ala Gly Leu Ile Val
 20 25 30
 Thr Ser Cys Val Ala Leu Gly Leu Tyr Phe Ser Gly Leu Tyr Arg Ser
 35 40 45
 Leu Phe Ser Phe Trp Trp Val Trp Cys Phe Ala Thr Leu Gly Val Ser
 50 55 60
 Phe Phe Ile Asn Ser Lys Ile Gln Thr Leu Ser Val Val Gly Gln Val
 65 70 75 80
 Met Ala Tyr Ala Met Val Leu Ala Lys Gly Met Glu Ile Asp Cys Pro
 85 90 95
 Arg Asn Leu Ala Lys Ser Val Thr Val Glu
 100 105

<210>1239

<211>217

<212>PRT

<213>Chlamydia pneumoniae

<400>1239

Met Ser Asn Lys Val Leu Gly Gly Ser Leu Leu Ile Ala Gly Ser Ala
 1 5 10 15
 Ile Gly Ala Gly Val Leu Ala Val Pro Val Leu Thr Ala Lys Gly Gly
 20 25 30
 Phe Phe Pro Ala Thr Phe Leu Tyr Ile Val Ser Trp Leu Phe Ser Met
 35 40 45
 Ala Ser Gly Leu Cys Leu Leu Glu Val Met Thr Trp Met Lys Glu Ser
 50 55 60
 Lys Asn Pro Val Asn Met Leu Ser Met Ala Glu Ser Ile Leu Gly His
 65 70 75 80
 Val Gly Lys Ile Ser Ile Cys Leu Val Tyr Leu Phe Leu Phe Tyr Ser
 85 90 95
 Leu Leu Ile Ala Tyr Phe Cys Glu Gly Asn Ile Leu Cys Arg Val
 100 105 110
 Phe Asn Cys Gln Asn Leu Gly Ile Ser Trp Ile Xaa Xaa Leu Gly Pro
 115 120 125
 Leu Gly Phe Ala Ile Leu Met Gly Pro Ile Ile Xaa Xaa Gly Thr Xaa
 130 135 140
 Xaa Ile Asp Tyr Cys Xaa Xaa Phe Phe Xaa Xaa Gly Leu Xaa Val Xaa
 145 150 155 160
 Phe Gly Ile Xaa Xaa Ala Leu Gly Phe Leu Lys Ile Gln Pro Ser Phe
 165 170 175
 Met Val Arg Ser Ser Met Val Asn Tyr Asn Lys Arg Ile Ser Cys Val
 180 185 190
 Phe Ser Leu Leu Phe Gly Phe Gln Ser Xaa Ile Pro Thr Leu Tyr Tyr
 195 200 205
 Tyr Met Asp Lys Lys Ser Trp Arg Cys
 210 215

<210>1240

<211>115

<212>PRT

<213>Chlamydia pneumoniae

<400>1240

Leu Val Ser Ser Phe Val Gly Val Ala Leu Gly Val Met Asp Phe Leu
 1 5 10 15
 Ala Asp Gly Leu Lys Trp Asn Lys Lys Ser His Pro Phe Ser Ile Phe
 20 25 30
 Phe Leu Thr Phe Ile Ile Pro Leu Ala Trp Ala Val Cys Tyr Pro Glu
 35 40 45
 Ile Val Leu Thr Cys Leu Lys Tyr Ala Gly Gly Phe Gly Ala Ala Val
 50 55 60
 Ile Ile Gly Val Phe Pro Thr Leu Ile Val Trp Lys Gly Arg Tyr Gly
 65 70 75 80
 Lys Gln His His Arg Glu Lys Gln Leu Val Pro Gly Gly Lys Phe Ala
 85 90 95
 Leu Phe Leu Met Phe Leu Leu Ile Val Ile Asn Val Val Ser Ile Tyr
 100 105 110
 His Glu Leu
 115

<210>1241

<211>105

<212>PRT

<213>Chlamydia pneumoniae

<400>1241

Leu Phe Pro Leu Val Leu Leu Ala Trp Val Ile Arg Tyr Gln Leu His
 1 5 10 15
 Ala Asn Phe His Cys Ser Val Val Pro Phe Pro Gly Phe Ser Val Asn
 20 25 30
 Gln Ala Tyr Lys Cys Ser Glu Ala Lys Ile Glu Glu Met Leu Asp Leu
 35 40 45
 Leu Asp Leu Glu Thr Leu Glu Trp Ser Ser Arg Cys Leu Arg Gln Asp
 50 55 60
 Met Thr Phe Ala Asn Arg Leu Glu Glu Glu Leu Ile Gln Glu Leu Arg

65 70 75 80
 Val Ser Glu Thr Glu Glu Leu Ile Ser Leu Gly Gly Lys Arg Asn Leu
 85 90 95
 Val Arg Leu Leu Leu Thr His Ser Phe
 100 105

<210>1242

<211>158

<212>PRT

<213>Chlamydia pneumoniae

<400>1242

Met Arg Val Ile Phe Pro Asp Lys His Asn Asn Phe Pro Asn Leu Ser
 1 5 10 15
 Lys Leu Leu Lys Lys Leu Pro Ser Val Ile Leu Val Thr Ser Cys Ile
 20 25 30
 Ala Pro Phe Phe Ser Tyr Ile Ile Asn Lys Phe Phe Gly Ile Pro Gly
 35 40 45
 Leu Leu Glu Ile Leu Ala Leu Ser Val Lys Gly Ile Gln Lys His His
 50 55 60
 Phe Trp Gln Phe Leu Thr Tyr Pro Leu Ile Thr Ala Asp Ser Leu Ser
 65 70 75 80
 Leu Asn Lys Asp Gln Ser Phe Glu Ile Thr Gln Arg Leu Leu Leu Arg
 85 90 95
 Asn Val Leu Asp Phe Phe Leu Phe Tyr Lys Ala Ile Gln His Leu Ile
 100 105 110
 Arg Lys Leu Gly Ala Phe Ser Val Leu Val Val Ile Ser Gly Gln Ala
 115 120 125
 Leu Ile Ile Gly Ala Val Leu Trp Gly Phe Met Ala Leu Ile Thr Ala
 130 135 140
 Pro Asn Leu Ser Ser Val Arg Lys Val Leu Ser Val Val Phe
 145 150 155

<210>1243

<211>135

<212>PRT

<213>Chlamydia pneumoniae

<400>1243

Met Arg Leu Lys Asn Tyr Pro Met Ile Gln Phe Ser Phe Phe Leu Pro
 1 5 10 15
 Gln Thr Cys Ile Leu Leu Leu Ala Ser Asp Ser Leu Thr Asn Ile Leu
 20 25 30
 Ala Leu His His Leu Leu Ala Asn Tyr Ser Val Lys Gln Arg Met Leu
 35 40 45
 Val Leu Leu Arg Glu Ser Phe Phe Ala Phe Ile Ala Met Phe Ala Leu
 50 55 60
 Tyr Gly Leu Ala Leu Gly Gly Leu Lys Val Leu Asn Thr Pro Val Cys
 65 70 75 80
 Ala Ile Glu Val Val Gly Gly Ile Ala Val Thr Leu Ala Gly Val Arg
 85 90 95
 Ala Val Leu Arg Leu Gly Lys Glu Glu Ser Trp Ile Pro Tyr Lys Phe
 100 105 110
 Asn Met Ser Pro Ser Tyr Ser Pro Cys Ile Ser Pro Ile Ala Leu Pro
 115 120 125
 Leu Met Phe Gly Pro Ser Gly
 130 135

<210>1244

<211>160

<212>PRT

<213>Chlamydia pneumoniae

<400>1244

Met Lys Lys Lys Phe Ile Phe Tyr Phe Val Ile Val Phe Ser Leu Leu
 1 5 10 15
 Phe Leu Trp Glu Met Thr Ser Arg His Arg Pro Thr Phe Ser Phe Phe
 20 25 30
 Cys Pro Pro Ser Ser Ile Ala Ser Ser Thr Leu Gln Ser Leu Pro
 35 40 45

Leu Leu Leu Thr Ser Ala Trp His Thr Leu Lys Ala Ile Leu Gly Gly
 50 55 60
 Phe Phe Leu Ala Ile Thr Leu Ser Ile Val Leu Ala Thr Ile Met Leu
 65 70 75 80
 Ser Tyr Lys Ser Ala Lys Asp Leu Leu Gln Pro Leu Phe Ile Leu Leu
 85 90 95
 Gln Cys Thr Pro Met Phe Ala Leu Ala Pro Leu Ile Val Leu Trp Phe
 100 105 110
 Gly Trp Gly Ile Gly Ala Val Ile Val Pro Thr Ala Leu Thr Ile Phe
 115 120 125
 Phe Pro Leu Thr Leu Thr Ile Tyr Gln Gly Ile Leu Ser Thr Pro Glu
 130 135 140
 Glu Leu Ile Glu Gln Phe Val Leu Cys Gly Val Gln Asn Ser Asn Ser
 145 150 155 160

<210>1245

<211>227

<212>PRT

<213>Chlamydia pneumoniae

<400>1245

Met Leu Trp Gly Val Ser Met Arg Gln Ser Phe Asp Glu Leu Ser Gln
 1 5 10 15
 Asn Ala Phe Lys Asn Ile Phe Asn Lys Gln Arg Phe Cys Phe Ile Phe
 20 25 30
 Cys Ser Leu Cys Cys Phe Gly Phe Val Phe Ala Leu Phe Leu Lys Leu
 35 40 45
 Cys Ser Arg Leu Ala Pro Glu Ile Ser Leu Ser Thr Leu Gly Leu Gly
 50 55 60
 Ala Phe Phe Cys Ala Phe Ser Val Ile Cys Ala Ser Ala Ile Ile Val
 65 70 75 80
 Gln Phe Leu Leu His Lys Glu Ser Gln Gly Glu Thr Ser Lys Leu Cys
 85 90 95
 Cys Ala Ile Lys Asn Thr Trp Ser Ser Leu Trp Leu Ser Leu Leu Val
 100 105 110
 Ser Met Pro Phe Phe Ile Ala Met Val Ala Val Val Thr Val Ala Met
 115 120 125
 Leu Ser Ser Phe Leu Gly Ser Leu Pro Trp Val Gly Lys Leu Phe His
 130 135 140
 Thr Val Leu Ile Phe Ile Pro Tyr Leu Ser Ala Thr Ala Leu Ile Leu
 145 150 155 160
 Leu Phe Leu Gly Ser Phe Ser Cys Leu Phe Phe Cys Ile Pro Val Leu
 165 170 175
 His Asn Gln Glu Ser Ile Asp Tyr Arg Lys Leu Pro Arg Val Phe Ser
 180 185 190
 Trp Glu Tyr Pro Ser Ala Val Tyr Arg Gly Gly Asp Cys Phe Gly Ser
 195 200 205
 Xaa Ser Pro Met Gln Leu Val Ser Phe Arg Phe Phe Leu Phe Asp Asp
 210 215 220

Thr Ser Cys

225

<210>1246

<211>78

<212>PRT

<213>Chlamydia pneumoniae

<400>1246

Val Val Ile Ala Leu Val Pro Leu Ala Leu Cys Ser Trp Leu Ala Leu
 1 5 10 15
 Asp Ser Phe Tyr Leu Met Thr His Leu Val Glu Ile Ala Asp Ile His
 20 25 30
 Thr Trp Ser Phe Leu Ala Gln Met Phe Val Leu Ile Val Pro Ile Ala
 35 40 45
 Leu Ile Leu Thr Pro Ala Val Ser Phe Phe Phe Asn Phe Ser Phe Ser
 50 55 60
 Phe Tyr Leu Ala Lys Gln Glu Glu Glu Lys Ala Leu Val Lys
 65 70 75

<210>1247

<211>94

<212>PRT

<213>Chlamydia pneumoniae

<400>1247

Leu Arg Ala Phe Phe Pro Val Lys Ala Trp Arg Ser Pro Glu Asp Ile
 1 5 10 15
 Pro Glu Ala Pro Ser Pro Lys Gly Ile Gly Ser Lys Arg Ser Ile Val
 20 25 30
 Ala Val Pro Trp Glu Trp Arg Ser Arg Cys Gln Val Thr Glu Ser Pro
 35 40 45
 Ala Tyr Pro Ala Pro Lys Thr Ala Ile Arg Ile Lys Cys Thr Leu Asn
 50 55 60
 Gln Val Ser Leu His Arg Pro Cys Leu Glu Asn Lys Arg Ile Arg Asp
 65 70 75 80
 Lys Arg Thr Gly Gly Asn Leu Ser Asp Trp Glu Ile Lys Met
 85 90

<210>1248

<211>86

<212>PRT

<213>Chlamydia pneumoniae

<400>1248

Met Arg Ile Ala Val Leu Gly Ala Gly Tyr Ala Gly Leu Ser Val Thr
 1 5 10 15
 Trp His Leu Leu Leu His Ser Gln Gly Thr Ala Thr Ile Asp Leu Phe
 20 25 30
 Asp Pro Ile Pro Leu Gly Glu Gly Ala Ser Gly Met Ser Ser Gly Leu
 35 40 45
 Leu His Ala Phe Thr Gly Lys Lys Ala Leu Lys Pro Pro Leu Val Gly
 50 55 60
 Ser Arg Asn Gln Cys Tyr Thr Arg Val Asn His Xaa Ala Leu Val Lys
 65 70 75 80
 Pro Ser Thr Tyr Leu Leu
 85

<210>1249

<211>232

<212>PRT

<213>Chlamydia pneumoniae

<400>1249

Leu Pro Met Asn Thr Ser His Arg Lys Thr Leu Val Phe Ser Tyr Leu
 1 5 10 15
 Ser Ser Thr Phe Thr Leu Leu Leu Val Leu Ser Asn Leu Val Leu Ser
 20 25 30
 Ser Lys Leu Ile Pro Thr Thr Phe Phe Asn Phe Ile Ile Pro Gly Gly
 35 40 45
 Leu Ile Leu Tyr Pro Leu Thr Phe Leu Ile Ser Asp Val Val Asn Glu
 50 55 60
 Ile Phe Gly Pro Lys Lys Ala Arg Val Met Ile Phe Ser Ala Phe Ile
 65 70 75 80
 Ala Asn Leu Leu Ala Ser Ser Ile Val Gln Ile Phe Met Phe Phe Pro
 85 90 95
 Val Ala Ser Pro Glu Met Gln Thr Ala Trp His Cys Leu Phe Asp Leu
 100 105 110
 Ser Pro Leu Arg Phe Leu Ala Ser Leu Leu Ala Phe Ile Val Ser Gln
 115 120 125
 Gln Leu Asp Ile Val Leu Tyr Thr Phe Phe Lys Asn Arg Thr Pro Asn
 130 135 140
 Ser Ser Leu Trp Leu Arg Ser Asn Gly Ser Thr Trp Ile Ser Gln Xaa
 145 150 155 160
 Pro Asp Thr Phe Ile Val Asp Thr Cys Ile Leu Tyr Phe Gly Met Gly
 165 170 175
 Leu Ser Phe Pro Gln Thr Leu Asn Ile Met Phe Tyr Ser Tyr Ile Tyr
 180 185 190
 Lys Ile Thr Phe Cys Val Leu Thr Thr Pro Leu Phe Tyr Leu Ala Val

195 200 205
 Asn Thr Ile Arg Lys Phe Leu Gly Met Pro Ser Thr Lys Ile Ala Asn
 210 215 220
 Thr Val Pro Leu Ile Asn Gln Pro
 225 230
 <210>1250
 <211>103
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1250
 Met Thr Pro Lys Ser Ile Gln Gln Leu His Leu Ile Lys Thr Ile Asp
 1 5 10 15
 Pro Val Arg Lys Ile Ser Pro Val Thr Thr Lys Lys Ser Ser Phe Phe
 20 25 30
 Arg Gln Ser Leu Leu Arg Phe Leu Glu Leu Phe Trp Met Phe Leu Tyr
 35 40 45
 Cys Ile Arg Ser Ile Arg Phe His Cys Val His Ile Ala Thr Phe Ile
 50 55 60
 Cys Arg Gly Leu Ile Leu Phe Leu Thr Thr Leu Phe Leu Ser Met Ile
 65 70 75 80
 Cys Ile Leu His Phe Ile Thr Leu Pro Trp Ile Cys Lys Glu Asp Pro
 85 90 95
 Arg Ile Ile Arg Lys Asn Lys
 100
 <210>1251
 <211>79
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1251
 Leu Asn Phe Ala Lys Ile Asp His Asn His Leu Tyr Leu Thr Cys Leu
 1 5 10 15
 Gly Asp Leu Gly Val Ala Cys Pro Ile Leu Ser Thr Asp Cys Leu Pro
 20 25 30
 Asn Tyr Ser Glu Lys Ala Ser His Glu Val Leu Val Tyr Ser Lys Phe
 35 40 45
 Arg Cys Ile Ser Gly Glu Pro Ser Arg Leu Ala Thr Ser Gly Asn Asp
 50 55 60
 Thr Tyr Tyr Ser Ile Val Ser Leu Pro Ile Gly Leu Arg Tyr Glu
 65 70 75
 <210>1252
 <211>85
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1252
 Met Val Glu Ile His His Lys Asp Pro Ser Leu Lys Lys Leu Phe Ala
 1 5 10 15
 Leu Gln Gln Ser Leu Glu Thr Leu Asn Ser Leu Ser Asp Ile Val Ala
 20 25 30
 Thr Tyr Glu Ala Met Phe Ser Leu Ile Tyr Glu Gly Leu Asn Lys Ala
 35 40 45
 Leu Arg Lys Asp Gln Leu Cys Tyr Leu Leu Ser Val Asn Ser Lys Gly
 50 55 60
 Glu Leu Leu Lys Ser Pro Ser Gly Asp Pro Ile Val Gln Thr Phe Pro
 65 70 75 80
 Ile His Pro His His
 85
 <210>1253
 <211>75
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1253
 Met Glu Glu Val Pro Phe Glu Asn Ala Met Gln Arg Leu Glu Glu Ile
 1 5 10 15
 Val Asp Leu Met Asn Gln Pro Thr Thr Ser Leu Asp Ala Ser Leu Ala

20 25 30
 Leu Tyr Glu Glu Ala Asp Ala Leu Met Arg Ile Cys Glu Ser Arg Ile
 35 40 45
 Arg Gln Val Glu Gln Arg Val Arg Glu Leu Ala Glu Lys Arg His Glu
 50 55 60
 Ser Ser Leu Phe Glu Glu Gln Ala Val Val Arg
 65 70 75

<210>1254

<211>126

<212>PRT

<213>Chlamydia pneumoniae

<400>1254

Met Tyr Ile Ser Ser Ser Phe Ser Ser Ser Ala Lys Val Ser Ala Ile
 1 5 10 15
 Cys Leu Ala Ser Ile Cys Ser Lys Val Ser Ser Arg Phe Leu Ser Asn
 20 25 30
 Asn Ile Asn Pro Lys Thr Asn Arg Thr Thr Pro Arg Glu Ile Val Leu
 35 40 45
 Ile Pro Asn Pro Gln Thr Met Ser Ala Leu Asn Pro Glu Ile Thr Pro
 50 55 60
 Leu Ser Thr Ile Ala Pro Gln Thr Thr Arg Arg Met Pro Thr Thr Asn
 65 70 75 80
 Lys Val Ile Pro Arg Ala Arg Asp Leu Leu Ser Leu Gly Ile Thr Asn
 85 90 95
 Phe Val Ser Ser Gly Gly Val Gly Asp Thr Cys Arg Ile Ala Gly Ala
 100 105 110
 Ala Val Met Ile Glu Tyr Gln Asn His Lys Arg Asn Ile Asp
 115 120 125

<210>1255

<211>81

<212>PRT

<213>Chlamydia pneumoniae

<400>1255

Met Glu Ser Lys Lys Val Ser Lys Leu Ala Ser Asn Ser Thr Phe Phe
 1 5 10 15
 Leu Ala Ser Val Ser Cys Leu Gly Ser Thr Val Pro Pro Tyr Arg Ala
 20 25 30
 Leu Arg Ser Leu Thr Arg Val Ser Thr Ser Ser Cys Phe Phe Arg Lys
 35 40 45
 Asn Phe Val Leu Ala Ser Ser Arg Arg Ser Thr Lys Ser Asp Lys Ser
 50 55 60
 Phe Leu Phe Ala Ser Val Asp Ser Phe Glu Leu Ser Ser Arg Ser Phe
 65 70 75 80
 Ser

<210>1256

<211>80

<212>PRT

<213>Chlamydia pneumoniae

<400>1256

Leu Leu Gly Met Cys Thr Leu Leu Leu Ile Pro Lys Gln Leu Arg Leu
 1 5 10 15
 Leu Ile Leu Thr Lys Cys Leu Ser Ile Thr Leu Ser His Thr Leu Ile
 20 25 30
 His Thr Arg Leu Gln Gly Ser Lys Cys Leu Phe Lys Gly Arg Leu Arg
 35 40 45
 His Thr Ile Asn Met Pro Ile Lys Ser His Gly Tyr Leu Pro Tyr Val
 50 55 60
 Thr Ser Arg Ser His Lys Ala Ile His Asn Leu Thr Ser Arg Phe Leu
 65 70 75 80

<210>1257

<211>87

<212>PRT

<213>Chlamydia pneumoniae

<400>1257

Gly Ser Thr Phe Ala Asn Leu Ser Leu His Leu Leu Tyr Cys Thr Lys
 1 5 10 15
 Ala Leu Val Asn Ala Cys Phe Ile Gly Trp Ser Gly Arg Ser Ala Ile
 20 25 30
 Arg Ser Ile Ile Ser Ile Ser Ser Thr Arg Gly Arg Val Ser Ser Ile
 35 40 45
 Ser Ser His Lys Thr Leu Arg Arg Phe Ala Ala Ser Glu Ser Met Val
 50 55 60
 Tyr Ser Ile Ser Ser Val Ala Ser Leu Ser Thr Pro Lys Ala Lys Val
 65 70 75 80
 Ser Ala Phe Asp Asn Leu Leu
 85

<210>1258

<211>81

<212>PRT

<213>Chlamydia pneumoniae

<400>1258

Met His Pro His Ser Lys Cys Arg Phe Leu Gly Phe Ser Cys Phe Lys
 1 5 10 15
 Lys Leu Ser Ile Ala Gly Thr Asn Val Leu Leu Ile Lys Glu Asp Phe
 20 25 30
 Pro Asp Pro Glu Thr Pro Val Thr Pro Ile Ser Arg Ala Asn Gly Arg
 35 40 45
 Arg Ile Glu Arg Phe Leu Arg Leu Trp Ile Val Ala Ser Val Ser Lys
 50 55 60
 Ser Gln Asp Val Gly Ala Ser Arg Asp Ser Gly Met Gly Met Val Ser
 65 70 75 80
 Ser

<210>1259

<211>107

<212>PRT

<213>Chlamydia pneumoniae

<400>1259

Met Ile Ala Pro Ser Leu Pro Ala Leu Leu Ala Ile Cys Phe Asn Gly
 1 5 10 15
 Ala Val Asn Ala Phe Arg Ile Ile Arg Val Pro Ile Ala Ser Ser Ser
 20 25 30
 Phe Ala Ser Ile Gly Arg Lys Ala Ser Ser Val Gly Ile Gln Arg Thr
 35 40 45
 Lys Ala Val Pro Pro Pro Gly Arg Ile Pro Ser Ser Thr Ala Ala Met
 50 55 60
 Val Ala Cys Cys Ala Ser Ser Thr Leu Ser Phe Phe Ser Phe Ile Ser
 65 70 75 80
 Ile Ser Val Ala Ala Pro Thr Arg Ile Thr Ala Thr Pro Pro Glu Ser
 85 90 95
 Leu Ala Lys Arg Ser Trp Ser Phe Ser Leu Ser
 100 105

<210>1260

<211>76

<212>PRT

<213>Chlamydia pneumoniae

<400>1260

Leu Pro Pro Ala Leu Gln Val Leu Tyr Met Lys Ser Leu Asp Asn Ala
 1 5 10 15
 Asn Leu Glu Ile Leu His Lys Ile Phe Gln Val Gln Val Glu Ala Asn
 20 25 30
 Glu Leu Pro Leu Gln Met Leu His Glu Thr Thr Pro Lys Ala Leu Leu
 35 40 45
 Gln Gly His Ala Ala Phe Ser Asp Gln Asn Glu Leu Leu Glu Ile Ser
 50 55 60
 Tyr Thr Tyr His Lys Leu Thr Ser Tyr Lys Glu Ala
 65 70 75

<210>1261

<211>76

<212>PRT

<213>Chlamydia pneumoniae

<400>1261

Met Cys Asn Arg Cys Lys Asp Ser Ser Thr Ser Leu Val Phe Ser Thr
 1 5 10 15
 Cys Leu Gly Thr His Lys Thr Glu Thr Pro Ser Phe Ile Asn Phe Cys
 20 25 30
 Thr Thr Gly Ser His Phe Pro Ala Ser Leu Leu Cys Ile Glu Pro Arg
 35 40 45
 Ile Thr Asn Phe Glu Ser Val Gly Asn Leu Lys Arg Ser Leu Gln Val
 50 55 60
 Ser Leu Ser Lys Cys Ser Ala Val Cys Ala Ala Thr
 65 70 75

<210>1262

<211>80

<212>PRT

<213>Chlamydia pneumoniae

<400>1262

Met Leu Asn His Gln Gln His Lys Val Val Ser Ile Ser Gln Phe His
 1 5 10 15
 Gln Gln Arg Gln Leu Val His Lys Lys Asn Trp Arg Arg Gly Ser Thr
 20 25 30
 Thr His Lys Glu Cys Ala Thr Asp Ala Lys Ile Leu Gln His Pro Trp
 35 40 45
 Ser Phe Gln Arg Val Leu Ala Pro Ile Lys Leu Arg Pro Pro Leu Leu
 50 55 60
 Leu Ile Ser Ala Leu Gln Glu Ala Ile Phe Leu His His Phe Tyr Ala
 65 70 75 80

<210>1263

<211>112

<212>PRT

<213>Chlamydia pneumoniae

<400>1263

Met Ile Arg Leu Trp Ser Cys Ser Ser Ile Lys Ile Glu Thr Val Pro
 1 5 10 15
 Tyr Ser Lys Glu Ile Ala Tyr Cys Arg Trp Tyr Ser Asn Thr Thr Leu
 20 25 30
 Ser Tyr Trp Ile Leu Ile Arg Glu Lys Cys Arg Pro Thr Lys Lys Ser
 35 40 45
 Ala Ser Ser Arg Phe Leu Thr Lys Asn Asn Asn Ile Val His His Met
 50 55 60
 Ser Ser Gln Lys Leu Phe Ala Phe Gln Ala Lys Ile Phe Val Ala Phe
 65 70 75 80
 Phe Phe Gln Lys Asn Ile Phe Tyr Gln Phe Phe Phe Phe Arg Met Thr
 85 90 95
 Cys Lys Val Lys Arg Ser Ile Phe Gln Glu Glu Phe Cys Arg Pro Ile
 100 105 110

<210>1264

<211>148

<212>PRT

<213>Chlamydia pneumoniae

<400>1264

Ser Gly Arg Ile Ile Ser Val Met Leu Ser Ala Pro Pro Cys Glu Leu
 1 5 10 15
 His Ser Asp Leu Ile Asp Pro Asp Leu Phe Glu Phe Asn His Arg Leu
 20 25 30
 Asn Ile Cys Ile Ser Ala Glu Val Arg Gly Arg Val Thr His Thr
 35 40 45
 Phe Arg Gly Asp Ser Cys Asn Met Ser Phe Asn Cys Ser Val Arg Gly
 50 55 60
 Asn Val Ile Thr Ile Pro Arg Ile Ile Arg Ile Glu Ile Arg Ser Leu
 65 70 75 80

Thr Ser Ser Phe Ser Ile Ile Thr Lys Cys Lys Arg Ile Ser Ser Arg
 85 90 95
 Leu Arg Ile Thr Asn Ile Ile Ala Tyr Trp Ser Leu Arg Tyr Val Cys
 100 105 110
 Leu Arg Ile Asp Ile Lys Thr Val Arg Glu Cys Ser Ser Ile Lys Leu
 115 120 125
 Arg Thr Phe Arg Arg His Ile Thr Leu His Asn Lys Phe Thr Trp Arg
 130 135 140
 Ser Arg Gly Ile
 145

<210>1265

<211>130

<212>PRT

<213>Chlamydia pneumoniae

<400>1265

Ser Phe Phe Ser Phe Arg Lys Val Pro Asn Phe Ser Asn Gln Pro Met
 1 5 10 15
 Cys Phe Leu Ile Arg Ser Cys Trp Ser Ala Ser Ile Asn Ala Trp Arg
 20 25 30
 Gly Asp Arg Phe Cys Asp Ser Ser Leu Ser Asn His Asp His Met Val
 35 40 45
 Cys Asn Arg Asn Met Pro Ser Asn Ser Gly Leu Pro Ser Asn Asp Asp
 50 55 60
 Met Phe Thr Asn Phe Cys Arg Thr Cys Asn Ala Cys Leu Gly Asn Asn
 65 70 75 80
 Asn Thr Met Leu Ser Asn Phe Tyr Val Met Ser Tyr Leu Tyr Leu Val
 85 90 95
 Ile Tyr Phe Ser Ser Phe Met Asp His Gly Val Leu Glu Ser Thr Thr
 100 105 110
 Ile Tyr Arg Ser Val Gly Ser Asp Phe Tyr Ile Ile Thr Tyr Asn His
 115 120 125
 Ile Ala
 130

<210>1266

<211>78

<212>PRT

<213>Chlamydia pneumoniae

<400>1266

Glu Ala Val Phe Val Ser Gly Lys Lys Asp Gly Val Arg Gly Met Ile
 1 5 10 15
 Phe Val Pro Leu Ser Ile Leu Val Leu Ile Phe Leu Pro Leu Pro Gln
 20 25 30
 Ile Leu Leu Asp Phe Gly Leu Cys Ile Ser Phe Ala Leu Ser Leu Leu
 35 40 45
 Thr Val Cys Trp Val Phe Thr Leu Asn Ser Ser Asn Ser Ala Lys Phe
 50 55 60
 Phe Leu His Phe Ser Tyr Ile Phe Ala Tyr Cys Gly Trp Asp
 65 70 75

<210>1267

<211>74

<212>PRT

<213>Chlamydia pneumoniae

<400>1267

Leu Cys Thr Asp Ser Thr Ser Ile Ser Cys Cys Ser Ile Ile Ile Glu
 1 5 10 15
 Gly Cys Asn Ser Trp Val Val Phe Tyr Arg Thr Thr Asn Ala Ile Asp
 20 25 30
 Ser Pro Ser Arg Gly Met Val Ser Arg Asp Val Arg Phe His Gly Lys
 35 40 45
 Ile Ile Val Glu Asp His Arg Thr Gly Ile Leu Cys Lys Asn Ala Leu
 50 55 60
 Leu Met Tyr Ser Tyr Cys Thr Thr Gln Thr
 65 70

<210>1268

```

<210>1269
<211>184
<212>PRT
<213>Chlamydia pneumoniae
<400>1269
Phe Phe Val Phe Thr His Val Trp Tyr Leu Ile Ser Arg Gly Tyr Phe
  1           5           10          15
Tyr Ser Leu Phe Ser Leu Gly Val Gly Ala Leu Ala Thr Leu Thr Leu
      20          25          30
Ala Thr Arg Ile Gly Arg Ser Pro Ile Leu Tyr Pro Phe Ala Asn Ser
      35          40          45
Ser Lys Ile Val Pro Ser Gly Thr Ser Glu Val Ser Ser Val Cys Thr
      50          55          60
Ala Ser Cys Arg Lys Gly Leu Asn Phe Trp Pro Ile Glu Glu Tyr Ser
      65          70          75          80
Ile Ile Pro Phe Ser Ser Lys Ile Cys Leu Asn Trp Leu Arg Ile Met
      85          90          95
Leu Asn Pro Arg Ala Gln Phe Phe Thr Ser Ser Asp Ile Cys Val Ala
      100         105         110
Asn Pro Arg Ala Phe Ser Met Leu Ser Met Gly Leu Arg Lys Ser Ile
      115         120         125
Lys Val Phe Ser Lys Ala Tyr Cys Ile Ser Ser Trp Arg Ser Phe Cys
      130         135         140
Lys Arg Phe Leu Glu Phe Ser Asp Ser Ala Arg Ala Met Arg Tyr Leu
      145         150         155         160
Ser Phe Phe Ser Phe Asn Ser Val Phe Arg Val Thr Ile Ser Cys Cys
      165         170         175
Lys Cys Ser Thr Ser Phe Ser Phe
      180

```

1180

<210>1271
 <211>78
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1271
 Phe Leu Lys Thr Met Thr Lys Gly Phe Ala Phe Cys Ser Ala Ser Phe
 1 5 10 15
 Pro Ile Ala Ile Ile Glu Asn Val Val Ser Lys Ser Val Glu Gly Val
 20 25 30
 Ser His Pro Glu Gly Glu Asn Ala Asn Pro Ser Leu Leu Ser Leu Val
 35 40 45
 Met Ala Ser Trp Thr Leu Gly Gly Thr Ser Thr Ser Ser Leu Asn Lys
 50 55 60
 Ala Leu Ala Lys Val Leu Ile Ser Ser Gly Asp Val Phe Pro
 65 70 75

<210>1272
 <211>122
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1272
 Met Thr Thr Gly Ser Cys Ser Pro Ser Lys Ala Leu Phe Val Cys Ile
 1 5 10 15
 Asn Cys Ile Ala Phe Ile Glu Met Ser Thr Asn Thr Thr Glu Ala Ala
 20 25 30
 Pro Arg Leu Arg Ala Ser Lys Pro Ile Ala Pro Ile Pro Ala Lys Arg
 35 40 45
 Ser Lys Lys Ala Ala Pro Ser Ile Ser Ser Leu Gln Ile Leu Lys Asn
 50 55 60
 Ala Ser Phe Thr Lys Pro Glu Val Gly Arg Ile Cys Gly Leu Glu Asn
 65 70 75 80
 Val Phe Lys Asp Phe Pro Leu Tyr Leu Pro Ala Lys Ile Leu Thr Ser
 85 90 95
 Pro Leu Glu Glu Gln Ser Leu Arg Asn Gln Gln Pro Leu Val Cys Ser
 100 105 110
 Gly Ser Leu Gly Tyr Tyr Arg Ile His Leu
 115 120

<210>1273
 <211>112
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1273
 Phe Thr Phe Phe Phe Leu Ala Gln Leu Glu Lys Gln Leu Pro His Leu
 1 5 10 15
 Val Leu Phe Phe Phe Ser Ala Thr Ser Ser Leu Arg Ala Ser Phe
 20 25 30
 Ile His Ser Ser Leu Trp Ser Arg Val Phe Ser Ser Ser Phe Leu Arg
 35 40 45
 Phe Ala Lys Phe Thr Ser Ala Phe Ser Ser Ser Leu Glu Ala Ala Ser
 50 55 60
 Thr Thr Ser Phe Cys Leu Leu Thr Phe Ser Ser Ser Ser Glu Ser Cys
 65 70 75 80
 Thr Ala Thr Thr Leu Met Tyr Asp Phe Ile Cys Lys Thr Ala Ser Leu
 85 90 95
 Val Val Pro Ser Ser Asn Lys Ser Arg Ser Cys Trp Ile Phe Cys Ile
 100 105 110

<210>1274
 <211>82
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1274
 Leu Ser Ala Lys Leu Met Lys Thr Ser Leu Gly Val Cys Val Gly Ile
 1 5 10 15
 Ala Gly Ile Ser Lys Gly Arg Cys Leu Ile Asn Ala Lys Ser Pro Phe
 20 25 30

Ser Leu Lys Ile Ser Glu Arg Ser Glu Arg Glu Arg Val Trp Arg Ser
 35 40 45
 Tyr Val Tyr Ser Val Asp Val Gly Pro Gly Val Phe Leu Met Met Thr
 50 55 60
 Ser Lys Arg Glu Arg Leu Phe Pro Arg Arg Ile Ala Val Thr Thr Pro
 65 70 75 80
 Glu Thr

<210>1275

<211>134

<212>PRT

<213>Chlamydia pneumoniae

<400>1275

Met Asn Ser Pro Thr Ile Lys Asp Pro Ser Leu Glu Thr Ala Cys Ala
 1 5 10 15
 Asp Asp Leu Leu Ala Pro Gly Ile Leu Glu Ser Arg Cys Cys Ser Pro
 20 25 30
 Ser Phe Gln Tyr Thr Ala Leu Ala Ile Ser Ser Leu Pro Met Ala Ser
 35 40 45
 Pro Thr Ile Thr Glu Pro Ser Ser Glu Ala Ser Gln Ala Gln Glu Cys
 50 55 60
 Arg Ser Ser Gly Lys Leu Gly Arg Thr Thr Ile Pro Val Ser Ser His
 65 70 75 80
 Phe Thr Ala Lys Phe Val Ser Val Ser Ser Leu Tyr Arg His Pro Thr
 85 90 95
 Ile Val Phe Pro Ser Leu Glu Thr Pro Ser Ala Lys Asp Cys Ile Pro
 100 105 110
 Ser Glu Asn Ile Pro Arg Ser Thr Ser Ala Pro Phe Thr His Phe Thr
 115 120 125
 Ala Arg Gln Asp Gly Ser
 130

<210>1276

<211>84

<212>PRT

<213>Chlamydia pneumoniae

<400>1276

Met Arg Ser Trp Thr Arg Trp Thr Arg Cys Gly Ser Cys Cys Arg Cys
 1 5 10 15
 Ser Gly Ser Trp Arg Cys Ser Arg Ser Cys Cys Arg Asn His Gly Ser
 20 25 30
 Asn Thr Asn Tyr Ser Ser Ser Cys Cys Pro Ser Gly Glu Thr Ser Cys
 35 40 45
 Tyr His Ser Cys Gln Thr Ser Asp His Arg Gly Tyr Lys Ser Gly Cys
 50 55 60
 Gln Ile Trp Asn Lys Ser Ile Tyr Gln Asn Phe Ser Gln Ser Asp Cys
 65 70 75 80
 Gln Ser His Phe

<210>1277

<211>76

<212>PRT

<213>Chlamydia pneumoniae

<400>1277

Met Arg Glu Phe Ser Cys Ile Lys Asp Arg Lys Asn Arg Cys Phe Arg
 1 5 10 15
 Ala Ala Ala Val Lys Ile Met Cys Thr Pro Ser Arg Ser Ser Ala Arg
 20 25 30
 Thr Thr Arg Pro Lys Glu Val Lys Lys Arg Thr Ser Leu Glu Tyr Ile
 35 40 45
 Gln Ser Ile Trp Asp Leu Gly Pro Leu Asp Val Tyr Ser Cys Phe Ser
 50 55 60
 Lys Glu Thr Ser Ser Glu Leu Tyr Ala Lys Arg Phe
 65 70 75

<210>1278

<211>78

<212>PRT

<213>Chlamydia pneumoniae

<400>1278

Met Met Ile Val Arg Cys Cys Phe Arg Ala Leu Leu Cys Phe Ser Met
 1 5 10 15
 Cys Ser Arg Thr Ser Arg Pro Arg Ser Pro Ile Lys Ala Ile Thr Leu
 20 25 30
 Ile Val Asp Phe Asp Pro Lys Ala Ile Ala Glu Ser Ser Glu Asp Phe
 35 40 45
 Pro Leu Pro Gly Ser Glu Lys Thr Pro Ile Arg Cys Pro Phe Pro Lys
 50 55 60
 Val Arg Asn Ala Ser Ile Ala Leu Ile Pro Val Gly Lys Ile
 65 70 75

<210>1279

<211>86

<212>PRT

<213>Chlamydia pneumoniae

<400>1279

Met Arg Arg Ile Phe Pro Thr Ser Ile Leu Leu Ile Ala Thr Phe Cys
 1 5 10 15
 Lys Leu Pro Ser Ser Lys Thr Ser Gln Pro Val Val Gly Ala Ser Cys
 20 25 30
 Phe Lys Glu Thr Lys Val Leu Phe Ala Phe Pro Asp Thr Ile Cys Pro
 35 40 45
 Asn Ala Ser Glu Ile Ala Asn Lys Thr Arg Ser Lys Ala Pro Ser Lys
 50 55 60
 Ala Pro Pro Ile Lys Ile Glu Pro Lys Gly Ala Asp Val Ile Lys Ile
 65 70 75 80
 Ser Met Phe Thr Thr Phe
 85

<210>1280

<211>124

<212>PRT

<213>Chlamydia pneumoniae

<400>1280

Val Lys Gly Val Leu Lys Arg Gln Arg Leu Ser Leu Thr Met Gly Gly
 1 5 10 15
 Arg Ser Lys Leu Lys Arg Arg Ser Trp Leu Lys Ala Ala Gln Thr Thr
 20 25 30
 Pro Val Val Cys Trp Arg Arg Asn Val Ile Phe Ser Thr Val Ile Phe
 35 40 45
 Ser Pro Ala Ile Ile Arg Ser Pro Ser Ser Ser Leu Glu Ala Ser Ser
 50 55 60
 Thr Thr Ile Thr Asn Phe Pro Ala Leu Lys Ser Ser Ile Ala Arg Ser
 65 70 75 80
 Lys Glu Thr Lys Phe Ala Glu Pro Thr Ser Ser Arg Val Ser Ile Ile
 85 90 95
 Asp Ser Leu Ala Leu Thr Asp Ser Asp Ala Lys His Ala Thr Leu Lys
 100 105 110
 Ile Leu Ser Phe Gln Phe Leu Met Gly Ser Lys Thr
 115 120

<210>1281

<211>85

<212>PRT

<213>Chlamydia pneumoniae

<400>1281

Ile Gln Arg Thr Leu Cys Leu Leu Phe Phe Lys Lys Phe Ile Leu Leu
 1 5 10 15
 Ile Leu Val Arg Thr Leu Arg Phe Pro Ile Leu Thr Phe Leu Ser Trp
 20 25 30
 Leu Asn Phe Arg Leu Lys Leu Ile Phe Ser Leu Ile Leu Tyr Gly Leu
 35 40 45
 Ala Asn Val Ala Gln Leu Val Arg Ala Ser Asp Cys Gly Ser Glu Gly

50 55 60
 Arg Gly Phe Lys Pro Arg Arg Ser Pro Ser Leu Ser Ser Leu Phe Leu
 65 70 75 80
 Leu Phe Phe Leu Ile
 85

<210>1282

<211>112

<212>PRT

<213>Chlamydia pneumoniae

<400>1282

Val Leu Tyr Asn Pro Lys Ala Phe Ile Thr His Ala Ala Ser Leu Arg
 1 5 10 15
 Gln Thr Phe Val His Cys Glu Arg Phe Ser Thr Ala Ala Ser Arg Arg
 20 25 30
 Ser Leu Gly Ser Val Ser Val Pro Val Leu Ala Val Asn Leu Ser Ile
 35 40 45
 Arg Leu Asp Val Ile Ala Leu Val Gly Phe Tyr Pro Thr Asn Lys Leu
 50 55 60
 Ile Ser His Lys Leu Phe Leu Asn Arg Lys Val Arg Arg Ser Pro Ser
 65 70 75 80
 Leu Ile Tyr Ile Arg Cys Leu Ile Thr Leu His Ser Val Leu Ala Ile
 85 90 95
 Val Ser Asn Arg Tyr Pro Gln Val Glu Gly Arg Leu Ser Met Tyr Tyr
 100 105 110

<210>1283

<211>77

<212>PRT

<213>Chlamydia pneumoniae

<400>1283

Leu Glu Ser Gly Leu Pro Arg Phe Arg Leu Gly Phe Thr Cys Leu Ala
 1 5 10 15
 Leu Leu Arg Tyr Arg Leu Ala Ser Phe Val Phe Ser Phe Thr Gly Leu
 20 25 30
 Ser Pro Cys Ile Val Gln Leu Ser Arg Ser Ile Gln Leu Lys Leu Lys
 35 40 45
 Ile Pro Cys Tyr Arg Pro Tyr Asn Pro Ile Leu Lys Ile Trp Phe Arg
 50 55 60
 Leu Phe Pro Phe Arg Ser Pro Leu His Arg Glu Ser Leu
 65 70 75

<210>1284

<211>85

<212>PRT

<213>Chlamydia pneumoniae

<400>1284

Met Ile Tyr Gln Asn Gly Ile Gly Val Trp Asn Ile Asn Pro Val Phe
 1 5 10 15
 Tyr Gln Cys Ser Ser Asn Glu Asp Val Gly Phe Leu Ile Phe Glu Phe
 20 25 30
 Arg Lys Asp Ile Arg Glu Val Leu Ser Ser His Leu Thr Met Ser Tyr
 35 40 45
 Ala Asn Thr Ser Leu Arg Asn Gln Ile Ala Asn Gly Leu Ser Lys Ser
 50 55 60
 Ile Asp Ala Leu Asn Pro Ile Met Asn Asp Ile Gly Leu Ser Ser Ser
 65 70 75 80
 Lys Glu Leu Val Pro
 85

<210>1285

<211>94

<212>PRT

<213>Chlamydia pneumoniae

<400>1285

Val Lys Leu Lys Leu Phe Ser Val Ile Ala Cys Ile Thr Phe Gln Lys
 1 5 10 15
 Arg Asp Thr Leu Cys Ser Ile Tyr Thr Ile Gly Asp Phe Leu Gln Ile

20 25 30
 Gln Ser Ile Asp Ser Ile Trp Val Met Asp Gln Asn Asn Leu Phe Phe
 35 40 45
 Tyr Lys Pro Trp Lys Lys Gly Lys Ser His Lys Asn Asn Cys Ile Leu
 50 55 60
 Gln Gly Phe Leu Gly Ile Asn Gly Phe Cys Leu His Glu Glu Ser Leu
 65 70 75 80
 Ser Cys Pro Arg Cys Ala Arg Thr Tyr His Trp Ile Phe Arg
 85 90

<210>1286

<211>74

<212>PRT

<213>Chlamydia pneumoniae

<400>1286

Met Gln Gln Ser Val Arg Lys Leu Phe Gly Thr Asp Gly Val Arg Gly
 1 5 10 15
 Arg Ala Asn Phe Glu Pro Met Thr Val Glu Thr Thr Val Leu Leu Gly
 20 25 30
 Lys Ala Val Ala Arg Val Leu Arg Glu Gly Arg Ser Gly Lys His Arg
 35 40 45
 Val Val Val Gly Lys Asp Thr Arg Leu Ser Gly Tyr Met Phe Glu Asn
 50 55 60
 Ala Leu Ile Ala Gly Ser Ile Leu Trp Gly
 65 70

<210>1287

<211>88

<212>PRT

<213>Chlamydia pneumoniae

<400>1287

Val His Phe Ser Asn Ser Ser Pro Phe Asn Val Trp Thr Leu Trp Leu
 1 5 10 15
 Ala Ala Cys Cys Thr Leu Ile Ala Arg Asn His Asn Thr Leu Ile Asn
 20 25 30
 Phe Gln Ile Leu Ile Leu Ser Trp Leu Leu Ile Thr Leu Ala Thr Phe
 35 40 45
 Ser Leu Gln Ile Phe Cys Lys Gly Asn Lys Val Leu Leu Ala Thr Gln
 50 55 60
 Thr Val Leu Gly Leu Phe Val Thr Ile Val Gly Thr Gln Leu Leu Val
 65 70 75 80
 Ser Gly Leu Gln Gln Ala Phe Leu
 85

<210>1288

<211>119

<212>PRT

<213>Chlamydia pneumoniae

<400>1288

Met Phe Arg Arg Lys Leu Ser Ile Leu Phe Gln Leu Ser Leu Thr Ser
 1 5 10 15
 Ser Met Val Arg Val Thr Ser Ser Cys Leu Ile Leu Lys Thr Ser Phe
 20 25 30
 Leu Tyr Ser Ala Thr Ala Arg Thr Ala Leu Ser Asp Asn Ser Cys Thr
 35 40 45
 Leu Glu Ala Ala Ser Val Ser Cys Asp Arg Glu Val Lys Thr Phe Pro
 50 55 60
 Ile Pro Leu Lys Lys Val Phe Ala Val Ala Ser Leu Asn Leu Pro Glu
 65 70 75 80
 Ile Leu Trp Thr Asn Pro Lys Met Leu Ser Pro Glu Ile Ser Pro Thr
 85 90 95
 Ile Gly Ala Ile Ala Pro Lys Ile Pro Asn Val Ala Val Ala Ile Pro
 100 105 110
 Ser Gln Arg Ala Tyr Leu Ala
 115

<210>1289

<211>126

<212>PRT

<213>Chlamydia pneumoniae

<400>1289

Met Val Ile Ile Phe Arg Leu Ser Ser Ser Leu Phe Ile Gly Arg Cys
 1 5 10 15
 Phe Ser Ser Gln Ser Gln Asn Phe Ser Phe Ser Lys His Leu Ile Thr
 20 25 30
 Arg Glu Ile Ser Pro Ala Lys Lys Pro Ala Lys Ala Lys Ile Pro Pro
 35 40 45
 Pro Leu Lys Ile Ala Thr Met Pro Ile Pro Ile Glu Thr Asn Gly Ala
 50 55 60
 Ser Gln Pro Ile Met Ser Glu Arg Asp Pro His Asn Leu Ser Arg Phe
 65 70 75 80
 Ser Phe Ser Met Leu Thr Leu Ile Val Ser Ile Leu Phe Ser Cys Arg
 85 90 95
 Ala Ser Ser Ser Arg Cys Val Asp Ser Thr Glu Ser Leu Trp His Pro
 100 105 110
 Tyr Glu Glu Lys Ser Glu Arg Ile Pro Cys Phe Val Ser Arg
 115 120 125

<210>1290

<211>94

<212>PRT

<213>Chlamydia pneumoniae

<400>1290

Arg Asp Tyr Val Gly His Pro Met Gly Ile Tyr Arg Asn Arg Arg Cys
 1 5 10 15
 Arg Gly Asp Val Trp Thr Ser Lys Lys Ser Ser Leu Cys Arg Ala Ser
 20 25 30
 Tyr Ser Leu Arg Ile Phe Arg Leu Pro Asn Asn Leu His Leu Ile Phe
 35 40 45
 Phe Ile Thr Phe Trp Leu Ala Leu Pro Thr Ser Thr Ser Glu His Pro
 50 55 60
 Gln Ser Leu Tyr Ser Trp Cys Pro Arg His Pro Arg Arg Glu Met Gly
 65 70 75 80
 Arg Ser Ala His Glu Cys Arg Pro Asp Tyr Cys Cys Phe Ile
 85 90

<210>1291

<211>98

<212>PRT

<213>Chlamydia pneumoniae

<400>1291

Met Gly Phe Cys Asn Phe Val Ile Tyr Pro Cys Arg Glu Glu Phe Asn
 1 5 10 15
 Ile Phe Cys Cys Pro Ser Ala Asn Lys Leu Ser Ile Phe Ile Phe Thr
 20 25 30
 Pro Ala Asn Ala Asp Ser Gly Gly Asp Arg Met Gly Ser Val Arg Glu
 35 40 45
 Ser Ser Thr Thr Thr Arg His Asp Tyr Phe Lys Asp Ser Ala Val Phe
 50 55 60
 Glu Arg Phe Tyr Thr Gly Ile Tyr Arg Asn Asp Ile Pro Lys Glu Leu
 65 70 75 80
 Phe Arg Lys Tyr Arg Cys Ile Arg Asp Asp Ile Lys Ile Phe Asp Phe
 85 90 95
 Cys Leu

<210>1292

<211>20

<212>DNA

<400>1292

tgaccacttg gttgtaggga 20

<210>1293

<211>20

<212>DNA

<400>1293

ggagttctcc tttggagtta 20
<210>1294
<211>20
<212>DNA
<400>1294
cgcttagtcc atcggtttt 20
<210>1295
<211>20
<212>DNA
<400>1295
cgaacacctg aacttgctct 20
<210>1296
<211>20
<212>DNA
<400>1296
tctgagagcg ttgaagcaga 20
<210>1297
<211>20
<212>DNA
<400>1297
taggagcata gaccgcaagc 20
<210>1298
<211>20
<212>DNA
<400>1298
ggaaggattc actgcacgta 20
<210>1299
<211>20
<212>DNA
<400>1299
ggtcactccg agcgctcgta 20
<210>1300
<211>20
<212>DNA
<400>1300
gcatgcagga catctaccta 20
<210>1301
<211>20
<212>DNA
<400>1301
ccacgaatct cttggggaaa 20
<210>1302
<211>20
<212>DNA
<400>1302
ggctcggatc gttgttttct 20
<210>1303
<211>20
<212>DNA
<400>1303
ctgaaacccc gatcataggt 20
<210>1304
<211>20
<212>DNA
<400>1304
gcgggttatt tcttattgga 20
<210>1305
<211>20
<212>DNA
<400>1305
cttgggttgg atggagatag 20
<210>1306
<211>20
<212>DNA

<400>1306
gtggagtcgt agaagtgcaa 20
<210>1307
<211>20
<212>DNA
<400>1307
ggggaagaaa tgccgcaaaa 20
<210>1308
<211>20
<212>DNA
<400>1308
ccaagaagca cagggtttac 20
<210>1309
<211>20
<212>DNA
<400>1309
catgggtctg ttgcattca 20
<210>1310
<211>20
<212>DNA
<400>1310
cactctgccca ctcttccgta 20
<210>1311
<211>20
<212>DNA
<400>1311
cagacgcagc accaaagaaa 20
<210>1312
<211>20
<212>DNA
<400>1312
cgcttttctc ctaagtgatg 20
<210>1313
<211>20
<212>DNA
<400>1313
ggggcatgaa ctttttaggc 20
<210>1314
<211>20
<212>DNA
<400>1314
ctgaagagct tatccaggag 20
<210>1315
<211>20
<212>DNA
<400>1315
catgagcgga gatttagggt 20
<210>1316
<211>20
<212>DNA
<400>1316
cccgcgtttg aaataggaga 20
<210>1317
<211>20
<212>DNA
<400>1317
agtccacgt tcaatgcaca 20
<210>1318
<211>20
<212>DNA
<400>1318
gggctagaat tttctgtcac 20
<210>1319
<211>20

<212>DNA
<400>1319
aagaaagcta cggcagtgcg 20
<210>1320
<211>20
<212>DNA
<400>1320
ggacgagctt accgtttttg 20
<210>1321
<211>20
<212>DNA
<400>1321
gaccttgcca gaacttcctt 20
<210>1322
<211>20
<212>DNA
<400>1322
gagcgcttcg aagaggttcc 20
<210>1323
<211>20
<212>DNA
<400>1323
gggaccatac tcttttctgg 20
<210>1324
<211>20
<212>DNA
<400>1324
cccaatctcg tttggctgat 20
<210>1325
<211>20
<212>DNA
<400>1325
ggtcatgggc tagaagagaa 20
<210>1326
<211>20
<212>DNA
<400>1326
cgagcggatc gattaaagag 20
<210>1327
<211>20
<212>DNA
<400>1327
ccaactgttc aagggacgac 20
<210>1328
<211>20
<212>DNA
<400>1328
cgagtcaaag gcttctaacc 20
<210>1329
<211>20
<212>DNA
<400>1329
cctaagtacg aagatcgagg 20
<210>1330
<211>20
<212>DNA
<400>1330
gagcggatcc aagagtttga 20
<210>1331
<211>20
<212>DNA
<400>1331
gggtcgattt cttctccatc 20
<210>1332

<211>20
<212>DNA
<400>1332
cagcgagttg cagcatttga 20
<210>1333
<211>20
<212>DNA
<400>1333
caggaagtgt tcgcatgttt 20
<210>1334
<211>20
<212>DNA
<400>1334
cgtgatctta ggcaactctt 20
<210>1335
<211>20
<212>DNA
<400>1335
gtgcgttagc gaaaacaacc 20
<210>1336
<211>20
<212>DNA
<400>1336
gcacagtaga tcctaagcag 20
<210>1337
<211>20
<212>DNA
<400>1337
caactgcgag agcggatcca 20
<210>1338
<211>20
<212>DNA
<400>1338
cctcttagct gaggatcttc 20
<210>1339
<211>20
<212>DNA
<400>1339
gttactttct ggagaaaggc 20
<210>1340
<211>20
<212>DNA
<400>1340
gctgcagctg gagatctaaa 20
<210>1341
<211>20
<212>DNA
<400>1341
cgacagtga cggttgaatc 20
<210>1342
<211>20
<212>DNA
<400>1342
ctgcgcaagg acatacgata 20
<210>1343
<211>20
<212>DNA
<400>1343
ggtggactag tcagatagaa 20
<210>1344
<211>20
<212>DNA
<400>1344
cgatgctatt tttccatggc 20

<210>1345
<211>20
<212>DNA
<400>1345
ggaggtgcta tcgcgattgc 20
<210>1346
<211>20
<212>DNA
<400>1346
gaacaggcac agcaatcaca 20
<210>1347
<211>20
<212>DNA
<400>1347
cggtttctct caggatgcaa 20
<210>1348
<211>20
<212>DNA
<400>1348
gtatcggctc tttagtcctt 20
<210>1349
<211>20
<212>DNA
<400>1349
cctagtagag gttgagtga 20
<210>1350
<211>20
<212>DNA
<400>1350
agctccatac atcgaaggga 20
<210>1351
<211>20
<212>DNA
<400>1351
tcgaactggc ttccggagga 20
<210>1352
<211>20
<212>DNA
<400>1352
ctgcagatct cggcaatatc 20
<210>1353
<211>20
<212>DNA
<400>1353
cggagggaact ctctattacc 20
<210>1354
<211>20
<212>DNA
<400>1354
gccctctctt tgtcttgctt 20
<210>1355
<211>20
<212>DNA
<400>1355
gaggggcaat tgcgattcta 20
<210>1356
<211>20
<212>DNA
<400>1356
cgtatcaatg aggtcagtc 20
<210>1357
<211>20
<212>DNA
<400>1357

gcggttcctg tagggataaa 20
<210>1358
<211>20
<212>DNA
<400>1358
gctcttcact caaggagggg 20
<210>1359
<211>20
<212>DNA
<400>1359
gttaagggaa gctggggaaa 20
<210>1360
<211>20
<212>DNA
<400>1360
gagacctcac ctggatctat 20
<210>1361
<211>20
<212>DNA
<400>1361
ggggaatcag gtcactacaa 20
<210>1362
<211>20
<212>DNA
<400>1362
caggctttga cccacagtat 20
<210>1363
<211>20
<212>DNA
<400>1363
gacacaggag gttcattctc 20
<210>1364
<211>20
<212>DNA
<400>1364
tctgctcttc aagacctcgg 20
<210>1365
<211>20
<212>DNA
<400>1365
gaaggtaacg aacggctcta 20
<210>1366
<211>20
<212>DNA
<400>1366
gcggatctga ggagtggatg 20
<210>1367
<211>20
<212>DNA
<400>1367
cggaggtaga gatatatccc 20
<210>1368
<211>20
<212>DNA
<400>1368
ggcgaatgta gctcagaaac 20
<210>1369
<211>20
<212>DNA
<400>1369
ggatggggtc tttggttttc 20
<210>1370
<211>20
<212>DNA

<400>1370
cctctgtcgt gagagacaaa 20
<210>1371
<211>20
<212>DNA
<400>1371
tcgggttggt gagagcaacc 20
<210>1372
<211>20
<212>DNA
<400>1372
cgcaggatcc ccactttttt 20
<210>1373
<211>20
<212>DNA
<400>1373
caaacgtcat aagcgccaca 20
<210>1374
<211>20
<212>DNA
<400>1374
gtatggcatt cgatgtcacg 20
<210>1375
<211>20
<212>DNA
<400>1375
gacctgcagt atagtctacc 20
<210>1376
<211>20
<212>DNA
<400>1376
aggagcgagg ttaccacgtt 20
<210>1377
<211>20
<212>DNA
<400>1377
cccaatccat tggtcccgat 20
<210>1378
<211>20
<212>DNA
<400>1378
ccttgattgc gtgttcgtgt 20
<210>1379
<211>20
<212>DNA
<400>1379
aagagctttg ccctgttctc 20
<210>1380
<211>20
<212>DNA
<400>1380
gcttgattga tcggttgagg 20
<210>1381
<211>20
<212>DNA
<400>1381
gctttaggaa ggctagcttc 20
<210>1382
<211>20
<212>DNA
<400>1382
gatagatcaa cacgtacgtc 20
<210>1383
<211>20

<212>DNA
<400>1383
gggtggaggag atgaagaatc 20
<210>1384
<211>20
<212>DNA
<400>1384
gggtaaaaaag agggagcgat 20
<210>1385
<211>20
<212>DNA
<400>1385
ccctaagtag gtctgcagat 20
<210>1386
<211>20
<212>DNA
<400>1386
cccgttcttc gcctgaaata 20
<210>1387
<211>20
<212>DNA
<400>1387
ctccatgata actcgcacca 20
<210>1388
<211>20
<212>DNA
<400>1388
ctccagaaac tcctgtgatg 20
<210>1389
<211>20
<212>DNA
<400>1389
ggtatatcc gccgaagaag 20
<210>1390
<211>20
<212>DNA
<400>1390
gacgcattgta cttctataag 20
<210>1391
<211>20
<212>DNA
<400>1391
gagacgactt cgctaaaacc 20
<210>1392
<211>20
<212>DNA
<400>1392
ggtaatgcat gccagtggt 20
<210>1393
<211>20
<212>DNA
<400>1393
tggtgaagga gcttgaccaa 20
<210>1394
<211>20
<212>DNA
<400>1394
gttcatggga aaggtcgtgg 20
<210>1395
<211>20
<212>DNA
<400>1395
cgggtccagat cttggaattg 20
<210>1396

<211>20
<212>DNA
<400>1396
gaccttgcca gcttgggtcg 20
<210>1397
<211>20
<212>DNA
<400>1397
gctgctaaat cccatcgctt 20
<210>1398
<211>20
<212>DNA
<400>1398
gttttgtggc tttggcagtg 20
<210>1399
<211>20
<212>DNA
<400>1399
actttcctaa gaagcgtagc 20
<210>1400
<211>20
<212>DNA
<400>1400
gaggaatggc gcaggagtta 20
<210>1401
<211>20
<212>DNA
<400>1401
gcagtgaaaa cggaatccag 20
<210>1402
<211>20
<212>DNA
<400>1402
gcgtggggat tgtagggata 20
<210>1403
<211>20
<212>DNA
<400>1403
ggccggggat caatcagcta 20
<210>1404
<211>20
<212>DNA
<400>1404
gaataagatg caggcggaag 20
<210>1405
<211>20
<212>DNA
<400>1405
gggagacgtt tgtgcgtaaa 20
<210>1406
<211>20
<212>DNA
<400>1406
cgtcctgcag gtgttattgt 20
<210>1407
<211>20
<212>DNA
<400>1407
caaggggtgt agagaaagga 20
<210>1408
<211>20
<212>DNA
<400>1408
gaagacaaac cttgtcctgg 20

<210>1409
<211>20
<212>DNA
<400>1409
cgtactaggg attgagcata 20
<210>1410
<211>20
<212>DNA
<400>1410
gagtgtctga cgtttctgag 20
<210>1411
<211>20
<212>DNA
<400>1411
ggaccgccat tacgagaaat 20
<210>1412
<211>20
<212>DNA
<400>1412
gagttgaact cctgccttga 20
<210>1413
<211>20
<212>DNA
<400>1413
atcagatcga agagctccag 20
<210>1414
<211>20
<212>DNA
<400>1414
ggtctaagca cgtaggttgt 20
<210>1415
<211>20
<212>DNA
<400>1415
gggatggcct taggtaaagt 20
<210>1416
<211>20
<212>DNA
<400>1416
ctgagagctg aacttgcttg 20
<210>1417
<211>20
<212>DNA
<400>1417
ctttggaaca tcgcaaagcg 20
<210>1418
<211>20
<212>DNA
<400>1418
cttggtaggg ttgtagagtc 20
<210>1419
<211>20
<212>DNA
<400>1419
gagttgaact cctgccttga 20
<210>1420
<211>20
<212>DNA
<400>1420
ggcatgttta tagtgtggcg 20
<210>1421
<211>20
<212>DNA
<400>1421

atgtgacagg tgctacccca 20
<210>1422
<211>20
<212>DNA
<400>1422
gagaatcaga ggcaagtcca 20
<210>1423
<211>20
<212>DNA
<400>1423
gaaggcttcc ttagtgagca 20
<210>1424
<211>20
<212>DNA
<400>1424
cagcgagttg cagcatttga 20
<210>1425
<211>20
<212>DNA
<400>1425
tcgcattgtt aggaccgctg 20
<210>1426
<211>20
<212>DNA
<400>1426
ttcctgaggc cccagaagag 20
<210>1427
<211>20
<212>DNA
<400>1427
gcatgtttag gaccgctgaa 20
<210>1428
<211>20
<212>DNA
<400>1428
ccatactctc tgatgcagcg 20
<210>1429
<211>20
<212>DNA
<400>1429
ggctcttaga gaaaccgagt 20
<210>1430
<211>20
<212>DNA
<400>1430
ctcggcaacg agttcaagaa 20
<210>1431
<211>20
<212>DNA
<400>1431
ggatatccag cacgtgctct 20
<210>1432
<211>20
<212>DNA
<400>1432
gttgtggctc aagaaggaca 20
<210>1433
<211>20
<212>DNA
<400>1433
gcgtgtgaaa gaagctgaag 20
<210>1434
<211>20
<212>DNA

<400>1434
cagctgaagg ctttcatttg 20
<210>1435
<211>20
<212>DNA
<400>1435
gcggagttgt gtgggtattt 20
<210>1436
<211>20
<212>DNA
<400>1436
gcaacaaagg cgaaatggca 20
<210>1437
<211>20
<212>DNA
<400>1437
cctatctatc ttacccaccg 20
<210>1438
<211>20
<212>DNA
<400>1438
gggaagcatc atcctactat 20
<210>1439
<211>20
<212>DNA
<400>1439
gtgcagatag cctctattgc 20
<210>1440
<211>20
<212>DNA
<400>1440
ggcatcgacg ccatcagtga 20
<210>1441
<211>20
<212>DNA
<400>1441
gtggcgtttg atttccagca 20
<210>1442
<211>20
<212>DNA
<400>1442
gattttgtca cgtggccgat 20
<210>1443
<211>20
<212>DNA
<400>1443
ggagatagcc taagttagcc 20
<210>1444
<211>20
<212>DNA
<400>1444
cgaacaaccc ctccccaag 20
<210>1445
<211>20
<212>DNA
<400>1445
ggggttttga gaagaaaacc 20
<210>1446
<211>20
<212>DNA
<400>1446
gagcagtagc tccacattga 20
<210>1447
<211>20

<212>DNA
<400>1447
cttaaactcg cagctttcgc 20
<210>1448
<211>20
<212>DNA
<400>1448
ccaaggacag catctcctaa 20
<210>1449
<211>20
<212>DNA
<400>1449
acaggggtca gagtaacaga 20
<210>1450
<211>20
<212>DNA
<400>1450
ccccgcttgc tttcaatact 20
<210>1451
<211>20
<212>DNA
<400>1451
cagagtttag cgtgggggtta 20
<210>1452
<211>20
<212>DNA
<400>1452
gagcgcgtta ccgataaaga 20
<210>1453
<211>20
<212>DNA
<400>1453
cggctttgag tgatcaagtg 20
<210>1454
<211>20
<212>DNA
<400>1454
aaactccctc tgcttggcgt 20
<210>1455
<211>20
<212>DNA
<400>1455
agagattggt gccgcctgta 20
<210>1456
<211>20
<212>DNA
<400>1456
ccccgaagge ttcaaaaatc 20
<210>1457
<211>20
<212>DNA
<400>1457
cagggaaata ccaagtagag 20
<210>1458
<211>20
<212>DNA
<400>1458
gcgggaaaag taaagctcct 20
<210>1459
<211>20
<212>DNA
<400>1459
ccctcaggaa cagaacctaa 20
<210>1460

<211>20
<212>DNA
<400>1460
ctcggagcgg tttggcttta 20
<210>1461
<211>20
<212>DNA
<400>1461
gagtacttgc tttcctagca 20
<210>1462
<211>20
<212>DNA
<400>1462
tgctataggg atccatacgc 20
<210>1463
<211>20
<212>DNA
<400>1463
tccctctgct tggcgtggat 20
<210>1464
<211>20
<212>DNA
<400>1464
ggctctagat ggaaaacctg 20
<210>1465
<211>20
<212>DNA
<400>1465
gcgcacgtat gcaggaatct 20
<210>1466
<211>20
<212>DNA
<400>1466
caccctacac ttgacctatg 20
<210>1467
<211>20
<212>DNA
<400>1467
gaatgggagt cccaaactca 20
<210>1468
<211>20
<212>DNA
<400>1468
tttgggcgag tccgttcgta 20
<210>1469
<211>20
<212>DNA
<400>1469
gagagagaaa aagcaacctc 20
<210>1470
<211>20
<212>DNA
<400>1470
gcctcaggaa taggattctc 20
<210>1471
<211>20
<212>DNA
<400>1471
ggagtcgtag acctaaggta 20
<210>1472
<211>20
<212>DNA
<400>1472
gataccgaaa tgcccctgta 20

<210>1473
<211>20
<212>DNA
<400>1473
aggctgcac cggattctat 20
<210>1474
<211>20
<212>DNA
<400>1474
gttgctgat gtaacctcag 20
<210>1475
<211>20
<212>DNA
<400>1475
gtgacagggg attggacgac 20
<210>1476
<211>20
<212>DNA
<400>1476
ctcaagatca attttggggc 20
<210>1477
<211>20
<212>DNA
<400>1477
gccccccctt aatatcagta 20
<210>1478
<211>20
<212>DNA
<400>1478
caatagggtg tgaaaggaga 20
<210>1479
<211>20
<212>DNA
<400>1479
ctgattgtca ctctgggatg 20
<210>1480
<211>20
<212>DNA
<400>1480
gacgggtcac ttatacgcat 20
<210>1481
<211>20
<212>DNA
<400>1481
gttactatgc tcgtctagcc 20
<210>1482
<211>20
<212>DNA
<400>1482
gtaggtgcgt gactgattag 20
<210>1483
<211>20
<212>DNA
<400>1483
ccgccaccag gatattttga 20
<210>1484
<211>20
<212>DNA
<400>1484
ggcgattcct gaagacacta 20
<210>1485
<211>20
<212>DNA
<400>1485

ggctctctcc gactgtctat 20
 <210>1486
 <211>20
 <212>DNA
 <400>1486
 gggttgctta cagacatcgt 20
 <210>1487
 <211>20
 <212>DNA
 <400>1487
 cgcattgtaca gagattctcc 20
 <210>1488
 <211>20
 <212>DNA
 <400>1488
 gctcattgga acagttgctc 20
 <210>1489
 <211>20
 <212>DNA
 <400>1489
 cgatctagaa gagctcagtc 20
 <210>1490
 <211>20
 <212>DNA
 <400>1490
 ccttcgcacc cgtagattta 20
 <210>1491
 <211>20
 <212>DNA
 <400>1491
 cgcaagggttt tgtgaaaggg 20
 <210>1492
 <211>20
 <212>DNA
 <400>1492
 ttatcggcac ggtttccgaa 20
 <210>1493
 <211>20
 <212>DNA
 <400>1493
 attacacgcg cgctatcagg 20
 <210>1494
 <211>20
 <212>DNA
 <400>1494
 agcctccagt ctctcttcta 20
 <210>1495
 <211>20
 <212>DNA
 <400>1495
 cgtgggtctg ctttgaaagc 20
 <210>1496
 <211>20
 <212>DNA
 <400>1496
 gaccgcgcag gcgtatgtaa 20
 <210>1497
 <211>20
 <212>DNA
 <400>1497
 ccttcgcacc cgtagattta 20
 <210>1498
 <211>20
 <212>DNA

<400>1498
ggatggacaa tgcgtctctg 20
<210>1499
<211>20
<212>DNA
<400>1499
gtacagcagg tatagtcgag 20
<210>1500
<211>20
<212>DNA
<400>1500
gtcgttaggg aagtaactgg 20
<210>1501
<211>20
<212>DNA
<400>1501
aggtgctgct ggagtcaata 20
<210>1502
<211>20
<212>DNA
<400>1502
ggctctagaa gcatatgggg 20
<210>1503
<211>20
<212>DNA
<400>1503
catgacagcc gatgttgaag 20
<210>1504
<211>20
<212>DNA
<400>1504
tattactggc ggtttgccctc 20
<210>1505
<211>20
<212>DNA
<400>1505
agcctgtggc tattccttcg 20
<210>1506
<211>20
<212>DNA
<400>1506
cagatgcagc ttgttgtagc 20
<210>1507
<211>20
<212>DNA
<400>1507
gtagcaagca taacccttg 20
<210>1508
<211>20
<212>DNA
<400>1508
gctgctggat gagctaaaga 20
<210>1509
<211>20
<212>DNA
<400>1509
ggttgaggga atctctacag 20
<210>1510
<211>20
<212>DNA
<400>1510
cgtcagtttg tagcactatg 20
<210>1511
<211>20

<212>DNA
<400>1511
caacgtggag atagtgtgat 20
<210>1512
<211>20
<212>DNA
<400>1512
ggatctagaa gaaggcctac 20
<210>1513
<211>20
<212>DNA
<400>1513
ggaaggtatt cgagctgttg 20
<210>1514
<211>20
<212>DNA
<400>1514
catgtgagtc ctagagctgt 20
<210>1515
<211>20
<212>DNA
<400>1515
cccttggttg tgcaaaggca 20
<210>1516
<211>20
<212>DNA
<400>1516
cagggcggtt tggatgacta 20
<210>1517
<211>20
<212>DNA
<400>1517
gagagcgagg gttttttctc 20
<210>1518
<211>20
<212>DNA
<400>1518
tcgccagatg ggactagata 20
<210>1519
<211>20
<212>DNA
<400>1519
gttcctcagc tcttcttgag 20
<210>1520
<211>20
<212>DNA
<400>1520
cctgtggact gttattgtcc 20
<210>1521
<211>20
<212>DNA
<400>1521
gattccgtgc aagagtcttg 20
<210>1522
<211>20
<212>DNA
<400>1522
gtctttatgc ggattcccg 20
<210>1523
<211>20
<212>DNA
<400>1523
cccagagatc ttcgatctat 20
<210>1524

<211>20
<212>DNA
<400>1524
aagtcattggc cgaagtctcg 20
<210>1525
<211>20
<212>DNA
<400>1525
cctgtggact gttattgtcc 20
<210>1526
<211>20
<212>DNA
<400>1526
ggaggagtga ttcattggact 20
<210>1527
<211>20
<212>DNA
<400>1527
catcacgat gtaggtcaag 20
<210>1528
<211>20
<212>DNA
<400>1528
gagtcgcttc acatgcagta 20
<210>1529
<211>20
<212>DNA
<400>1529
gtctccgagg tcttacttt 20
<210>1530
<211>20
<212>DNA
<400>1530
ccgttgctt atgtagcggg 20
<210>1531
<211>20
<212>DNA
<400>1531
gcttttgtgc tcttcttctc 20
<210>1532
<211>20
<212>DNA
<400>1532
tgatactata cgcctgggga 20
<210>1533
<211>20
<212>DNA
<400>1533
aactgggat cgcagtgtct 20
<210>1534
<211>20
<212>DNA
<400>1534
gatcgattt tccctgcttc 20
<210>1535
<211>20
<212>DNA
<400>1535
gacggtcaga gaattccaag 20
<210>1536
<211>20
<212>DNA
<400>1536
gaacgatttc ctggagtta 20

<210>1537
<211>20
<212>DNA
<400>1537
cagagactcc tgtaactccg 20
<210>1538
<211>20
<212>DNA
<400>1538
gcatagaaca gggcattctc 20
<210>1539
<211>20
<212>DNA
<400>1539
gagaagagca aggtgcgaaa 20
<210>1540
<211>20
<212>DNA
<400>1540
gctaagtttg tgagggctgt 20
<210>1541
<211>20
<212>DNA
<400>1541
gcaacgcaga tgctagaatc 20
<210>1542
<211>20
<212>DNA
<400>1542
gctaagtttg tgagggctgt 20
<210>1543
<211>20
<212>DNA
<400>1543
cacgagctga agtctctgat 20
<210>1544
<211>20
<212>DNA
<400>1544
cagaagctcc aagcactcca 20
<210>1545
<211>20
<212>DNA
<400>1545
ccgtgactcc aagcacttct 20
<210>1546
<211>20
<212>DNA
<400>1546
cggaggtctt gaacgggtatt 20
<210>1547
<211>20
<212>DNA
<400>1547
caaaggcgat tccaggatag 20
<210>1548
<211>20
<212>DNA
<400>1548
ctcgggtgcc ccagaaaaat 20
<210>1549
<211>20
<212>DNA
<400>1549

ccgtctgctg taaaaagtgc 20
<210>1550
<211>20
<212>DNA
<400>1550
tgggaagaca accttgggta 20
<210>1551
<211>20
<212>DNA
<400>1551
ggaaagtgc gtcgtatcat 20
<210>1552
<211>20
<212>DNA
<400>1552
ggccttcctt tcatcattac 20
<210>1553
<211>20
<212>DNA
<400>1553
ggagctcata tgagtgcctt 20
<210>1554
<211>20
<212>DNA
<400>1554
tcgtctaacc gttggttgaa 20
<210>1555
<211>20
<212>DNA
<400>1555
tagttgccag tgcgtttgct 20
<210>1556
<211>20
<212>DNA
<400>1556
cagcataggg ttttgattgc 20
<210>1557
<211>20
<212>DNA
<400>1557
ttgctgcata ctggcccaga 20
<210>1558
<211>20
<212>DNA
<400>1558
cctcactccc catgaaatca 20
<210>1559
<211>20
<212>DNA
<400>1559
tctggtctgg gtaaaagcgt 20
<210>1560
<211>20
<212>DNA
<400>1560
cgcgtagatc ccagaagaaa 20
<210>1561
<211>20
<212>DNA
<400>1561
gcagagatga atgggggaat 20
<210>1562
<211>20
<212>DNA

<400>1562
ctggtggcca tgggaacggc 20
<210>1563
<211>20
<212>DNA
<400>1563
catctatgat ccagaagccc 20
<210>1564
<211>20
<212>DNA
<400>1564
ccaacgccct ccgcatgcaa 20
<210>1565
<211>20
<212>DNA
<400>1565
gtatccatct catgcggact 20
<210>1566
<211>20
<212>DNA
<400>1566
ctgacgcat cgcattaaga 20
<210>1567
<211>20
<212>DNA
<400>1567
ctgtagatgc tcacggaagt 20
<210>1568
<211>20
<212>DNA
<400>1568
gcggaggata tgacgacttt 20
<210>1569
<211>20
<212>DNA
<400>1569
ggacatgcaa cgcaaattga 20
<210>1570
<211>20
<212>DNA
<400>1570
gttctttgag accctcgact 20
<210>1571
<211>20
<212>DNA
<400>1571
cgcacatcct tgagcaacaa 20
<210>1572
<211>20
<212>DNA
<400>1572
cactacctgc tgctaaagga 20
<210>1573
<211>20
<212>DNA
<400>1573
ggtcttccca tgcaacgttt 20
<210>1574
<211>20
<212>DNA
<400>1574
cttaaagccc ggattcgtga 20
<210>1575
<211>20

<212>DNA
<400>1575
ggagctggag ataaaggaag 20
<210>1576
<211>20
<212>DNA
<400>1576
gtatcgccca agaattgcct 20
<210>1577
<211>20
<212>DNA
<400>1577
caagcccgag aatgggtttt 20
<210>1578
<211>20
<212>DNA
<400>1578
aagaacggag gcgattatcc 20
<210>1579
<211>20
<212>DNA
<400>1579
gcgaagccct gtatattctc 20
<210>1580
<211>20
<212>DNA
<400>1580
ggtacgatcc acatagctct 20
<210>1581
<211>20
<212>DNA
<400>1581
gccgtcgcaa atgaaaatgc 20
<210>1582
<211>20
<212>DNA
<400>1582
gctgctgctt cgcatttgat 20
<210>1583
<211>20
<212>DNA
<400>1583
gctctcttgg atgccgatgt 20
<210>1584
<211>20
<212>DNA
<400>1584
cgagaagttc aagctgagaa 20
<210>1585
<211>20
<212>DNA
<400>1585
gtagctatgg ggcaagatgt 20
<210>1586
<211>20
<212>DNA
<400>1586
ggtgaaggca tggaaaagag 20
<210>1587
<211>20
<212>DNA
<400>1587
gaggcgatta tcctgtccat 20
<210>1588

<211>20
<212>DNA
<400>1588
cccatgacat tccttgtaag 20
<210>1589
<211>20
<212>DNA
<400>1589
gatgggccat tgcaaacgag 20
<210>1590
<211>20
<212>DNA
<400>1590
ctcggatgcc tagtgatatct 20
<210>1591
<211>20
<212>DNA
<400>1591
gagcaaagtg agcgtagaac 20
<210>1592
<211>20
<212>DNA
<400>1592
gcctagtgaat ctacgcgatt 20
<210>1593
<211>20
<212>DNA
<400>1593
gcatgcgaag aggacttttg 20
<210>1594
<211>20
<212>DNA
<400>1594
ggatacgaat tatgctaggg 20
<210>1595
<211>20
<212>DNA
<400>1595
gctagcagct gcaaatcagt 20
<210>1596
<211>20
<212>DNA
<400>1596
cgtttagcgg cttttcctgt 20
<210>1597
<211>20
<212>DNA
<400>1597
cggtgtagag tatgtccagt 20
<210>1598
<211>20
<212>DNA
<400>1598
aaactgggat agggattgcc 20
<210>1599
<211>20
<212>DNA
<400>1599
gagttccctt tcatttacct 20
<210>1600
<211>20
<212>DNA
<400>1600
ctgctgcaga agatgctttg 20

<210>1601
<211>20
<212>DNA
<400>1601
ccgcagattt tctccataga 20
<210>1602
<211>20
<212>DNA
<400>1602
cgttgtcgat gacagctact 20
<210>1603
<211>20
<212>DNA
<400>1603
ccttaggatt gggctgtggg 20
<210>1604
<211>20
<212>DNA
<400>1604
cgctttctga agctgagtct 20
<210>1605
<211>20
<212>DNA
<400>1605
gcgcaagagg aggttacaaa 20
<210>1606
<211>20
<212>DNA
<400>1606
gtttgttgcg tcagtgaag 20
<210>1607
<211>20
<212>DNA
<400>1607
cttgcattct tgacgcgtga 20
<210>1608
<211>20
<212>DNA
<400>1608
gtagtgcgaa accgcctttt 20
<210>1609
<211>20
<212>DNA
<400>1609
gaagatgcaa gtgaacggct 20
<210>1610
<211>20
<212>DNA
<400>1610
cttccgaaga gaactaggca 20
<210>1611
<211>20
<212>DNA
<400>1611
gaggaagagg agcatcatct 20
<210>1612
<211>20
<212>DNA
<400>1612
ccccagtata ggcaggcaac 20
<210>1613
<211>20
<212>DNA
<400>1613

gcaatgagca agagcttagg 20
<210>1614
<211>20
<212>DNA
<400>1614
agcctgcgag catagtgtct 20
<210>1615
<211>20
<212>DNA
<400>1615
cttttacggg atccggtcta 20
<210>1616
<211>20
<212>DNA
<400>1616
cagcagttga gcgggttttt 20
<210>1617
<211>20
<212>DNA
<400>1617
gtagtgaggg tgttttctct 20
<210>1618
<211>20
<212>DNA
<400>1618
cttcacaagc tgcggttcta 20
<210>1619
<211>20
<212>DNA
<400>1619
tcgaactcgg tgataagctg 20
<210>1620
<211>20
<212>DNA
<400>1620
cgctacttga gacaaagga 20
<210>1621
<211>20
<212>DNA
<400>1621
cttcctgtgt taaggctatc 20
<210>1622
<211>20
<212>DNA
<400>1622
atctccttgg aagacgtagc 20
<210>1623
<211>20
<212>DNA
<400>1623
agcacggtaa ggggattcag 20
<210>1624
<211>20
<212>DNA
<400>1624
acttgctgag aatgatgtgc 20
<210>1625
<211>20
<212>DNA
<400>1625
cggaacagct ttctactccct 20
<210>1626
<211>20
<212>DNA

<400>1626
cggttagata gccattgctc 20
<210>1627
<211>20
<212>DNA
<400>1627
cgctacttga gacaaaggga 20
<210>1628
<211>20
<212>DNA
<400>1628
gagcgcccat gttttcatgt 20
<210>1629
<211>20
<212>DNA
<400>1629
cgtaggggaa tatggggaag 20
<210>1630
<211>20
<212>DNA
<400>1630
ggtaagatga ttctccacg 20
<210>1631
<211>20
<212>DNA
<400>1631
gagacctcat ggaaaattgt 20
<210>1632
<211>20
<212>DNA
<400>1632
gggagaacga tttttccag 20
<210>1633
<211>20
<212>DNA
<400>1633
gtggettctt cttcttcct 20
<210>1634
<211>20
<212>DNA
<400>1634
gggttgtaat tcggcgatc 20
<210>1635
<211>20
<212>DNA
<400>1635
gggatgttat gttggaatag 20
<210>1636
<211>20
<212>DNA
<400>1636
cgtcggtgag tatctaggaa 20
<210>1637
<211>20
<212>DNA
<400>1637
gtggtaggca atgagttgga 20
<210>1638
<211>20
<212>DNA
<400>1638
gagatttcaa atcccagggt 20
<210>1639
<211>20

<212>DNA
<400>1639
gaaaccatcc gcagatgaga 20
<210>1640
<211>20
<212>DNA
<400>1640
cacttggata tcgaaacctg 20
<210>1641
<211>20
<212>DNA
<400>1641
ccttgagatc ggatttcttc 20
<210>1642
<211>20
<212>DNA
<400>1642
ggtaggagtt gggggaaaaa 20
<210>1643
<211>20
<212>DNA
<400>1643
cgaagcggtt gcagagttct 20
<210>1644
<211>20
<212>DNA
<400>1644
gggtaggaac ggatcttttg 20
<210>1645
<211>20
<212>DNA
<400>1645
ggctagaaaa agccgtgagt 20
<210>1646
<211>20
<212>DNA
<400>1646
gatgccactc tatagtcacg 20
<210>1647
<211>20
<212>DNA
<400>1647
ccacagcgct actactatgt 20
<210>1648
<211>20
<212>DNA
<400>1648
cttgetttct aaggctttgc 20
<210>1649
<211>20
<212>DNA
<400>1649
gggtgtaggg aaaactgcta 20
<210>1650
<211>20
<212>DNA
<400>1650
caggaagact gccagaagtt 20
<210>1651
<211>20
<212>DNA
<400>1651
acagaggggg ctttgaatgc 20
<210>1652

<211>20
<212>DNA
<400>1652
catatccaaa gtggctcctc 20
<210>1653
<211>20
<212>DNA
<400>1653
cccgcctttt aaaacgtttg 20
<210>1654
<211>20
<212>DNA
<400>1654
tctccaagag cgtcaacgcc 20
<210>1655
<211>20
<212>DNA
<400>1655
cgtggctttt ctccctgaaga 20
<210>1656
<211>20
<212>DNA
<400>1656
agcgtcaacg ccattcttggc 20
<210>1657
<211>20
<212>DNA
<400>1657
cgtggctttt ctccctgaaga 20
<210>1658
<211>20
<212>DNA
<400>1658
gcaggagaag ccggtcgcgg 20
<210>1659
<211>20
<212>DNA
<400>1659
ggtgcgtact cctgaagaaa 20
<210>1660
<211>20
<212>DNA
<400>1660
cctgtgacga acgaacagtt 20
<210>1661
<211>20
<212>DNA
<400>1661
agcatggggg accaatggct 20
<210>1662
<211>20
<212>DNA
<400>1662
gtgccaagat tggatatgggt 20
<210>1663
<211>20
<212>DNA
<400>1663
gtggtgttgc aggagaagcc 20
<210>1664
<211>20
<212>DNA
<400>1664
ctgctatccg gaattgtggg 20

<210>1665
<211>20
<212>DNA
<400>1665
catcgtata atcctggggc 20
<210>1666
<211>20
<212>DNA
<400>1666
ggcgaagaaa gctatagacc 20
<210>1667
<211>20
<212>DNA
<400>1667
ggtggagagg tgattccaaa 20
<210>1668
<211>20
<212>DNA
<400>1668
gcagaaagaa ctggtgggtc 20
<210>1669
<211>20
<212>DNA
<400>1669
ctaagagcaa ggagtttgag 20
<210>1670
<211>20
<212>DNA
<400>1670
gccaaaatga gacctgtagg 20
<210>1671
<211>20
<212>DNA
<400>1671
ggacgactta aggaatcaag 20
<210>1672
<211>20
<212>DNA
<400>1672
gaagccccta tagctactga 20
<210>1673
<211>20
<212>DNA
<400>1673
gagtattaga gaggctacct 20
<210>1674
<211>20
<212>DNA
<400>1674
gtctgggcaa gaagctaaag 20
<210>1675
<211>20
<212>DNA
<400>1675
caattggagc ccatacactc 20
<210>1676
<211>20
<212>DNA
<400>1676
ggaacgtgga tctcaacttg 20
<210>1677
<211>20
<212>DNA
<400>1677

gcccctatag ctactgaaaa 20
<210>1678
<211>20
<212>DNA
<400>1678
agcagcatgg cctcaaatag 20
<210>1679
<211>20
<212>DNA
<400>1679
ctccgctatg ggattttcgt 20
<210>1680
<211>20
<212>DNA
<400>1680
aaagtacgtc ctgatgcctt 20
<210>1681
<211>20
<212>DNA
<400>1681
tgggaaaccc accagggatt 20
<210>1682
<211>20
<212>DNA
<400>1682
ccaggttcct cactaagaac 20
<210>1683
<211>20
<212>DNA
<400>1683
ggtggcaagc caagtgttta 20
<210>1684
<211>20
<212>DNA
<400>1684
acgaagcttg ccaattaggg 20
<210>1685
<211>20
<212>DNA
<400>1685
ggttgacat tccttatggg 20
<210>1686
<211>20
<212>DNA
<400>1686
ccggtttcga gcttaaagag 20
<210>1687
<211>20
<212>DNA
<400>1687
aggtggttag agcagcagaa 20
<210>1688
<211>20
<212>DNA
<400>1688
ttcgggcaga tgcttgaga 20
<210>1689
<211>20
<212>DNA
<400>1689
gattgtggag ttgcagctct 20
<210>1690
<211>20
<212>DNA

<400>1690
cctcctgata gtaaaacccc 20
<210>1691
<211>20
<212>DNA
<400>1691
ccagttctttt aggcgtgtct 20
<210>1692
<211>20
<212>DNA
<400>1692
ggtgcgctgc tcatgctttt 20
<210>1693
<211>20
<212>DNA
<400>1693
caagcagctc ttctgtagca 20
<210>1694
<211>20
<212>DNA
<400>1694
gaggggcaaa ttggaaacct 20
<210>1695
<211>20
<212>DNA
<400>1695
taagaggcct gctgccccat 20
<210>1696
<211>20
<212>DNA
<400>1696
gcacatactg aggagctctt 20
<210>1697
<211>20
<212>DNA
<400>1697
gggagacgaa gtttcttgga 20
<210>1698
<211>20
<212>DNA
<400>1698
gttcgccgat tttccacct 20
<210>1699
<211>20
<212>DNA
<400>1699
gcgagccttt cttggtctat 20
<210>1700
<211>20
<212>DNA
<400>1700
gggctaattct taggaagcgt 20
<210>1701
<211>20
<212>DNA
<400>1701
gggttgatag gaattctccc 20
<210>1702
<211>20
<212>DNA
<400>1702
gtcagtggtgt gtctatagag 20
<210>1703
<211>20

<212>DNA
<400>1703
ggaataggca cataactgagg 20
<210>1704
<211>20
<212>DNA
<400>1704
agtgggtgcg ggagtcactc 20
<210>1705
<211>20
<212>DNA
<400>1705
ccaaggtgta tctacatctg 20
<210>1706
<211>20
<212>DNA
<400>1706
cggttgcagc taaacgttct 20
<210>1707
<211>20
<212>DNA
<400>1707
gggggatttg gtttggatct 20
<210>1708
<211>20
<212>DNA
<400>1708
caaagccgtc cttctcatct 20
<210>1709
<211>20
<212>DNA
<400>1709
gattcgctat gctcaaggtc 20
<210>1710
<211>20
<212>DNA
<400>1710
gggtctttcct cttgtttcca 20
<210>1711
<211>20
<212>DNA
<400>1711
ccgtccttgt cttgcttttt 20
<210>1712
<211>20
<212>DNA
<400>1712
gcgattgtat tgagtcgtgg 20
<210>1713
<211>20
<212>DNA
<400>1713
ccattgtttt tggaaccag 20
<210>1714
<211>20
<212>DNA
<400>1714
caggatctaa atgtggagcc 20
<210>1715
<211>20
<212>DNA
<400>1715
cattgaacag cttcttgggc 20
<210>1716

<211>20
<212>DNA
<400>1716
gcgtcaactc caatctcagc 20
<210>1717
<211>20
<212>DNA
<400>1717
cgagtctttg atttaccct 20
<210>1718
<211>20
<212>DNA
<400>1718
gcttcttcca tgtatgctac 20
<210>1719
<211>20
<212>DNA
<400>1719
acgtaagggc tcgactaact 20
<210>1720
<211>20
<212>DNA
<400>1720
ccggaaatac gctaaagtcc 20
<210>1721
<211>20
<212>DNA
<400>1721
gatggatggg cgtatatcca 20
<210>1722
<211>20
<212>DNA
<400>1722
ctctcaagcc gaagaaagag 20
<210>1723
<211>20
<212>DNA
<400>1723
ccatgccgcg gtacctttta 20
<210>1724
<211>20
<212>DNA
<400>1724
gcaatcacct cttgaagcag 20
<210>1725
<211>20
<212>DNA
<400>1725
gcatgagctg tgtcaatgac 20
<210>1726
<211>20
<212>DNA
<400>1726
ccgttctgga gacgagatac 20
<210>1727
<211>20
<212>DNA
<400>1727
tgaacttgct ctgaccccca 20
<210>1728
<211>20
<212>DNA
<400>1728
gaccctgccg ttaccctagc 20

<210>1729
<211>20
<212>DNA
<400>1729
ctgtagetgc agcaagttct 20
<210>1730
<211>20
<212>DNA
<400>1730
cggctcttacc agctatatgg 20
<210>1731
<211>20
<212>DNA
<400>1731
ggcccaaac cagtccaaat 20
<210>1732
<211>20
<212>DNA
<400>1732
gccggagaga tctaaaagca 20
<210>1733
<211>20
<212>DNA
<400>1733
acctcgggtga ggtaggata 20
<210>1734
<211>20
<212>DNA
<400>1734
gggcttgac agctttttct 20
<210>1735
<211>20
<212>DNA
<400>1735
gactcttcat cagtcttagc 20
<210>1736
<211>20
<212>DNA
<400>1736
cagctcctgt gatctcacag 20
<210>1737
<211>20
<212>DNA
<400>1737
caacaaccct tggaacctca 20
<210>1738
<211>20
<212>DNA
<400>1738
ttaggggtccg ttgggatagg 20
<210>1739
<211>20
<212>DNA
<400>1739
gggcttgac agctttttct 20
<210>1740
<211>20
<212>DNA
<400>1740
gacagtcaca cctgccttta 20
<210>1741
<211>20
<212>DNA
<400>1741

gacctggaga tggtagagaaa 20
<210>1742
<211>20
<212>DNA
<400>1742
ggactactac cataatacag 20
<210>1743
<211>20
<212>DNA
<400>1743
caggatcccc attggtaatc 20
<210>1744
<211>20
<212>DNA
<400>1744
ggactactac cataatacag 20
<210>1745
<211>20
<212>DNA
<400>1745
caggatcccc attggtaatc 20
<210>1746
<211>20
<212>DNA
<400>1746
caaccatctt caccgtaga 20
<210>1747
<211>20
<212>DNA
<400>1747
ccgcttgaac cccacatttt 20
<210>1748
<211>20
<212>DNA
<400>1748
gcgatcggta aactctcatc 20
<210>1749
<211>20
<212>DNA
<400>1749
ggactactac cataatacag 20
<210>1750
<211>20
<212>DNA
<400>1750
cctctccttt cactttcctc 20
<210>1751
<211>20
<212>DNA
<400>1751
cgactccagg tattcctaca 20
<210>1752
<211>20
<212>DNA
<400>1752
ggtgaggtct ctcaatgtct 20
<210>1753
<211>20
<212>DNA
<400>1753
cactagaacc ctacctatgc 20
<210>1754
<211>20
<212>DNA

<400>1754
cctgatgtca gtatttccgc 20
<210>1755
<211>20
<212>DNA
<400>1755
ggcagaaaac ctttgtcgaa 20
<210>1756
<211>20
<212>DNA
<400>1756
ccatgtctgg agcatggaaa 20
<210>1757
<211>20
<212>DNA
<400>1757
ttcacttatg gcgccctcgt 20
<210>1758
<211>20
<212>DNA
<400>1758
gttcctctgg agacttgaac 20
<210>1759
<211>20
<212>DNA
<400>1759
cagcattgtc ttgggattcc 20
<210>1760
<211>20
<212>DNA
<400>1760
gcttacgcta gaatcgctct 20
<210>1761
<211>20
<212>DNA
<400>1761
ccatgtctgg agcatggaaa 20
<210>1762
<211>20
<212>DNA
<400>1762
ggacaaacaa tgcttgcagg 20
<210>1763
<211>20
<212>DNA
<400>1763
taatccctc ttagcagggg 20
<210>1764
<211>20
<212>DNA
<400>1764
gtggatgggt gcaatttctt 20
<210>1765
<211>20
<212>DNA
<400>1765
ccttccttg ggaaaaatct 20
<210>1766
<211>20
<212>DNA
<400>1766
ccgcgataa cagtcacata 20
<210>1767
<211>20

<212>DNA
<400>1767
aggtaggttc cgtggtcata 20
<210>1768
<211>20
<212>DNA
<400>1768
gccaacgaga tacagacgac 20
<210>1769
<211>20
<212>DNA
<400>1769
ggacaaacaa tgcttgcagg 20
<210>1770
<211>20
<212>DNA
<400>1770
gcctgcacta ctattgcaca 20
<210>1771
<211>20
<212>DNA
<400>1771
gcccagcaca aataagatac 20
<210>1772
<211>20
<212>DNA
<400>1772
ggacttccgt tatgctaagg 20
<210>1773
<211>20
<212>DNA
<400>1773
gctctcctgc tccagagata 20
<210>1774
<211>20
<212>DNA
<400>1774
ccctatcacc tccaagattc 20
<210>1775
<211>20
<212>DNA
<400>1775
cgctatccct attgtcggaa 20
<210>1776
<211>20
<212>DNA
<400>1776
gagacctttc ttcaccagta 20
<210>1777
<211>20
<212>DNA
<400>1777
ctatcccgaa cggaagagac 20
<210>1778
<211>20
<212>DNA
<400>1778
ggccacacag atctcaaaaa 20
<210>1779
<211>20
<212>DNA
<400>1779
cttctggagc tgtagatctc 20
<210>1780

<211>20
<212>DNA
<400>1780
caggaacctt tgctatcgaa 20
<210>1781
<211>20
<212>DNA
<400>1781
tatcccagac gcctccacag 20
<210>1782
<211>20
<212>DNA
<400>1782
ccctagctcc catcatatct 20
<210>1783
<211>20
<212>DNA
<400>1783
ctaggccaca cagatctcaa 20
<210>1784
<211>20
<212>DNA
<400>1784
cacaagctca agtccttagg 20
<210>1785
<211>20
<212>DNA
<400>1785
actcccgact ctgcacttg 20
<210>1786
<211>20
<212>DNA
<400>1786
ccgtccaatc tagggttaga 20
<210>1787
<211>20
<212>DNA
<400>1787
gtctcgaaga gggatctcat 20
<210>1788
<211>20
<212>DNA
<400>1788
cccctcagct attgctaaag 20
<210>1789
<211>20
<212>DNA
<400>1789
cgctcaacca atccctaatac 20
<210>1790
<211>20
<212>DNA
<400>1790
cctttgacgg aggacttggt 20
<210>1791
<211>20
<212>DNA
<400>1791
tggagggact cgtaacacaaa 20
<210>1792
<211>20
<212>DNA
<400>1792
aaagcctttg acggaggact 20

<210>1793
<211>20
<212>DNA
<400>1793
tcctttggagg gactcgtaca 20
<210>1794
<211>20
<212>DNA
<400>1794
gcgctatgtt cctcactgct 20
<210>1795
<211>20
<212>DNA
<400>1795
gcatgggcta ccaaattctc 20
<210>1796
<211>20
<212>DNA
<400>1796
gcctttctgtc ataagctctc 20
<210>1797
<211>20
<212>DNA
<400>1797
aggagccggg aaaattccta 20
<210>1798
<211>20
<212>DNA
<400>1798
gccatgacga atcaaaggga 20
<210>1799
<211>20
<212>DNA
<400>1799
ctttagcctt gggatgatgc 20
<210>1800
<211>20
<212>DNA
<400>1800
gtttgtggta tcgcccttga 20
<210>1801
<211>20
<212>DNA
<400>1801
ggaggcttca actgtatagg 20
<210>1802
<211>20
<212>DNA
<400>1802
aaatttgtcc tggcccagcc 20
<210>1803
<211>20
<212>DNA
<400>1803
gggcaattcc cgtagtga 20
<210>1804
<211>20
<212>DNA
<400>1804
acctcttctg ttgtatctgg 20
<210>1805
<211>20
<212>DNA
<400>1805

cggtacgaat gccacgccat 20
<210>1806
<211>20
<212>DNA
<400>1806
ccctcaactc tcgaaaacag 20
<210>1807
<211>20
<212>DNA
<400>1807
cttgtcggct tctggtcttt 20
<210>1808
<211>20
<212>DNA
<400>1808
agacctatgc aaagtatggg 20
<210>1809
<211>20
<212>DNA
<400>1809
gtgcagaaaa ccacgaatc 20
<210>1810
<211>20
<212>DNA
<400>1810
ctcttgttcc gaagagaaag 20
<210>1811
<211>20
<212>DNA
<400>1811
cgacagctct cagagagatt 20
<210>1812
<211>20
<212>DNA
<400>1812
ggagaacacc caagacaatc 20
<210>1813
<211>20
<212>DNA
<400>1813
cctgagcttt cacatcaagc 20
<210>1814
<211>20
<212>DNA
<400>1814
gtgcgtgcct tgttctagat 20
<210>1815
<211>20
<212>DNA
<400>1815
ggacgctcat agtcttcctt 20
<210>1816
<211>20
<212>DNA
<400>1816
gtagcctctc tggtcacttt 20
<210>1817
<211>20
<212>DNA
<400>1817
gagggcccca gatattcttt 20
<210>1818
<211>20
<212>DNA

<400>1818
caggaggaag ctacatttgc 20
<210>1819
<211>20
<212>DNA
<400>1819
ccgctatcct cagcttttct 20
<210>1820
<211>20
<212>DNA
<400>1820
cgatattcag agaaacgccc 20
<210>1821
<211>20
<212>DNA
<400>1821
ccctgaatgc gcttctatca 20
<210>1822
<211>20
<212>DNA
<400>1822
cattgtcttc cctcccacaa 20
<210>1823
<211>20
<212>DNA
<400>1823
tcttcttcat ccaggcccag 20
<210>1824
<211>20
<212>DNA
<400>1824
caagcagttc tccaagctct 20
<210>1825
<211>20
<212>DNA
<400>1825
ggcatacctg agacaccttt 20
<210>1826
<211>20
<212>DNA
<400>1826
tggttcgctg gtaaagctgc 20
<210>1827
<211>20
<212>DNA
<400>1827
gatcaccagc taaagactgc 20
<210>1828
<211>20
<212>DNA
<400>1828
cgactttaca gcacactctc 20
<210>1829
<211>20
<212>DNA
<400>1829
ggtgcatctg aaaaccaaac 20
<210>1830
<211>20
<212>DNA
<400>1830
gacgactcta tagcgtttgg 20
<210>1831
<211>20

```

<212>DNA
<400>1831
ctcctgtgga gaatgaagtc 20
<210>1832
<211>20
<212>DNA
<400>1832
cccttttagca atctgggtcca 20
<210>1833
<211>20
<212>DNA
<400>1833
tggtgctgtat ggaaccaaatt 20
<210>1834
<211>20
<212>DNA
<400>1834
aagccttagga ctgcctgagg 20
<210>1835
<211>20
<212>DNA
<400>1835
gcttagggat tctcattctc 20
<210>1836
<211>20
<212>DNA
<400>1836
gcttgcagct gacgaatatg 20
<210>1837
<211>20
<212>DNA
<400>1837
cattctggga gctatcccta 20
<210>1838
<211>20
<212>DNA
<400>1838
cagaacaaga aggtctctca 20
<210>1839
<211>20
<212>DNA
<400>1839
ctcggcctcg gaatagtaag 20
<210>1840
<211>20
<212>DNA
<400>1840
cctataaacac cgcaaattctc 20
<210>1841
<211>20
<212>DNA
<400>1841
ccgaagcagc cttcttcaat 20
<210>1842
<211>20
<212>DNA
<400>1842
actgcttcca gcttggaat 20
<210>1843
<211>20
<212>DNA
<400>1843
gactcgggat tgtagctctt 20
<210>1844

```

<211>20
<212>DNA
<400>1844
ccgtgggtctt tgcttacgat 20
<210>1845
<211>20
<212>DNA
<400>1845
gcatccctgg aatttcttgc 20
<210>1846
<211>20
<212>DNA
<400>1846
gggccttcct acctttccta 20
<210>1847
<211>20
<212>DNA
<400>1847
gcttgcagct gacgaatatg 20
<210>1848
<211>20
<212>DNA
<400>1848
gccagggaag aatcacatca 20
<210>1849
<211>20
<212>DNA
<400>1849
cgcagtgcac agaactagga 20
<210>1850
<211>20
<212>DNA
<400>1850
gaacttggga cctcgacatt 20
<210>1851
<211>20
<212>DNA
<400>1851
gggccacttt gcgctatatt 20
<210>1852
<211>20
<212>DNA
<400>1852
caaatcggga gtctcaagat 20
<210>1853
<211>20
<212>DNA
<400>1853
gtgacaagaa gcaccgtctt 20
<210>1854
<211>20
<212>DNA
<400>1854
ccagggatag ggtgaaaagc 20
<210>1855
<211>20
<212>DNA
<400>1855
cactcttgag caaggtatcc 20
<210>1856
<211>20
<212>DNA
<400>1856
gcaacccag tatatctcca 20

<210>1857
<211>20
<212>DNA
<400>1857
gagtaacccc aggtaaagca 20
<210>1858
<211>20
<212>DNA
<400>1858
ccgccatcgc tatgaagtaa 20
<210>1859
<211>20
<212>DNA
<400>1859
gcagtgatga cttctcctac 20
<210>1860
<211>20
<212>DNA
<400>1860
cagtacaagc ggaacgtatg 20
<210>1861
<211>20
<212>DNA
<400>1861
ggaggagttg tctcctcttt 20
<210>1862
<211>20
<212>DNA
<400>1862
tcgggatatg gtacagaacc 20
<210>1863
<211>20
<212>DNA
<400>1863
atggaactct ctcaatgcga 20
<210>1864
<211>20
<212>DNA
<400>1864
ccagaagcat acgagcgttt 20
<210>1865
<211>20
<212>DNA
<400>1865
caagccatgt ctaagccatc 20
<210>1866
<211>20
<212>DNA
<400>1866
gaccttaacc ttctccttgcg 20
<210>1867
<211>20
<212>DNA
<400>1867
gatttccaac agcgccctctt 20
<210>1868
<211>20
<212>DNA
<400>1868
cctccttgaa ctaactgagc 20
<210>1869
<211>20
<212>DNA
<400>1869

ggcataggat ctgcgggcaa 20
<210>1870
<211>20
<212>DNA
<400>1870
gcagctcgat ggaagacatt 20
<210>1871
<211>20
<212>DNA
<400>1871
gccgaagaat gtacacgttg 20
<210>1872
<211>20
<212>DNA
<400>1872
cttcaactct cgagactgat 20
<210>1873
<211>20
<212>DNA
<400>1873
cgaggagcat tttatgtagc 20
<210>1874
<211>20
<212>DNA
<400>1874
cctcatgaaa cagagtctcg 20
<210>1875
<211>20
<212>DNA
<400>1875
ggaggaaaat gaccttgtgg 20
<210>1876
<211>20
<212>DNA
<400>1876
cttcaactct cgagactgat 20
<210>1877
<211>20
<212>DNA
<400>1877
cgaggagcat tttatgtagc 20
<210>1878
<211>20
<212>DNA
<400>1878
gaagaagagt ttccttggtc 20
<210>1879
<211>20
<212>DNA
<400>1879
gctcctaaaa cgatcgctga 20
<210>1880
<211>20
<212>DNA
<400>1880
cctcgggcta ggaatacttt 20
<210>1881
<211>20
<212>DNA
<400>1881
acctgcagct cgatggaaga 20
<210>1882
<211>20
<212>DNA

<400>1882
ccgccataaa agggtagaga 20
<210>1883
<211>20
<212>DNA
<400>1883
gcacgctata cacagaagca 20
<210>1884
<211>20
<212>DNA
<400>1884
cccatgtcg tacgaaaagt 20
<210>1885
<211>20
<212>DNA
<400>1885
gtaggcccgga acacaatagc 20
<210>1886
<211>20
<212>DNA
<400>1886
gacgataccc cggaaatcat 20
<210>1887
<211>20
<212>DNA
<400>1887
ctgccaatg aagaatcggg 20
<210>1888
<211>20
<212>DNA
<400>1888
gctgcagatc aatatgcgga 20
<210>1889
<211>20
<212>DNA
<400>1889
tacacgaggg cagaggcctt 20
<210>1890
<211>20
<212>DNA
<400>1890
ccaccgctca cacgaataat 20
<210>1891
<211>20
<212>DNA
<400>1891
cccatgtcg tacgaaaagt 20
<210>1892
<211>20
<212>DNA
<400>1892
gtcttactag agagggcgat 20
<210>1893
<211>20
<212>DNA
<400>1893
gggaagctat gtagggtttc 20
<210>1894
<211>20
<212>DNA
<400>1894
cctgcatgca gtgataacga 20
<210>1895
<211>20

<212>DNA
<400>1895
gtggagggaa aaaagtggag 20
<210>1896
<211>20
<212>DNA
<400>1896
gacaaagccg atatgctggt 20
<210>1897
<211>20
<212>DNA
<400>1897
cctagaaacg ctgcagatca 20
<210>1898
<211>20
<212>DNA
<400>1898
cttcccttc ctggaatcaa 20
<210>1899
<211>20
<212>DNA
<400>1899
cgagtccgta ctttgtcttc 20
<210>1900
<211>20
<212>DNA
<400>1900
cagaagctca ttggggaaaa 20
<210>1901
<211>20
<212>DNA
<400>1901
tttgctgcc tcctagatca 20
<210>1902
<211>20
<212>DNA
<400>1902
ccagaacacg tcgacatagc 20
<210>1903
<211>20
<212>DNA
<400>1903
cttcccttc ctggaatcaa 20
<210>1904
<211>20
<212>DNA
<400>1904
cgaaagatc gttctggcat 20
<210>1905
<211>20
<212>DNA
<400>1905
gcagggttacg agtctactaa 20
<210>1906
<211>20
<212>DNA
<400>1906
gcagacacat tacccttcac 20
<210>1907
<211>20
<212>DNA
<400>1907
cccggcagca gaactccctg 20
<210>1908

<211>20
<212>DNA
<400>1908
caccatctac agttgagtct 20
<210>1909
<211>20
<212>DNA
<400>1909
gtcctccatc tgcacaca 20
<210>1910
<211>20
<212>DNA
<400>1910
gctattggtg cttgtaggtc 20
<210>1911
<211>20
<212>DNA
<400>1911
catggagaag tcgtggtatc 20
<210>1912
<211>20
<212>DNA
<400>1912
atccgcccc gacagtaaat 20
<210>1913
<211>20
<212>DNA
<400>1913
cctgaagtta atccagttgc 20
<210>1914
<211>20
<212>DNA
<400>1914
ctgtgatctc cattgcgaac 20
<210>1915
<211>20
<212>DNA
<400>1915
cgtaagaaat agaagccaag 20
<210>1916
<211>20
<212>DNA
<400>1916
tggtctggatt tgaaccaacg 20
<210>1917
<211>20
<212>DNA
<400>1917
actagtccta tgtcctcctg 20
<210>1918
<211>20
<212>DNA
<400>1918
gtgatcctct tccacacaag 20
<210>1919
<211>20
<212>DNA
<400>1919
ccgcgctgtg atctccattg 20
<210>1920
<211>20
<212>DNA
<400>1920
gctaaggaaa acgcttcgca 20

<210>1921
<211>20
<212>DNA
<400>1921
ccatctactg ttgaatcgag 20
<210>1922
<211>20
<212>DNA
<400>1922
cccctagtct ttggtatcag 20
<210>1923
<211>20
<212>DNA
<400>1923
gtgacacctc tccacacaag 20
<210>1924
<211>20
<212>DNA
<400>1924
gctaggccat attctcatgg 20
<210>1925
<211>20
<212>DNA
<400>1925
catgggtcat ccaaatacaca 20
<210>1926
<211>20
<212>DNA
<400>1926
ctgacgctaa agagctctct 20
<210>1927
<211>20
<212>DNA
<400>1927
ctcttgtctc aaccctttcc 20
<210>1928
<211>20
<212>DNA
<400>1928
gccaaagacaa caagctgatt 20
<210>1929
<211>20
<212>DNA
<400>1929
cggagaacct agaaaccttc 20
<210>1930
<211>20
<212>DNA
<400>1930
caattcgccct aacaccagag 20
<210>1931
<211>20
<212>DNA
<400>1931
caggaacact acgcaatcct 20
<210>1932
<211>20
<212>DNA
<400>1932
ctctttgttg ggggattggc 20
<210>1933
<211>20
<212>DNA
<400>1933

I

cgtatagagg gtagttcttg 20
<210>1934
<211>20
<212>DNA
<400>1934
gggattggca gggttgcgga 20
<210>1935
<211>20
<212>DNA
<400>1935
gggtagttct tgtgcatcag 20
<210>1936
<211>20
<212>DNA
<400>1936
gactccctga aactgaagag 20
<210>1937
<211>20
<212>DNA
<400>1937
aggttcccta ggactcagcg 20
<210>1938
<211>20
<212>DNA
<400>1938
gaggatccgt tctctttcttc 20
<210>1939
<211>20
<212>DNA
<400>1939
ctctcctgga ttaagcggtc 20
<210>1940
<211>20
<212>DNA
<400>1940
gggaacaagg gccatcaaaa 20
<210>1941
<211>20
<212>DNA
<400>1941
gtagcagtag atctacctgg 20
<210>1942
<211>20
<212>DNA
<400>1942
ccgcacaaaa ccgcttatac 20
<210>1943
<211>20
<212>DNA
<400>1943
gactcttgct tctcctttga 20
<210>1944
<211>20
<212>DNA
<400>1944
gccacggtta tgaagacgaa 20
<210>1945
<211>20
<212>DNA
<400>1945
atagcacaca cctgctgacg 20
<210>1946
<211>20
<212>DNA

<400>1946
gtcttccctt tcttctgga 20
<210>1947
<211>20
<212>DNA
<400>1947
gctcctggga aaagttgagc 20
<210>1948
<211>20
<212>DNA
<400>1948
gagcacgtga tccaagaaac 20
<210>1949
<211>20
<212>DNA
<400>1949
ggttacggat cacttgctga 20
<210>1950
<211>20
<212>DNA
<400>1950
ccagaggtat cccacaaat 20
<210>1951
<211>20
<212>DNA
<400>1951
cgactggttc tcagtcacaa 20
<210>1952
<211>20
<212>DNA
<400>1952
acaatacccc cgtcctctaa 20
<210>1953
<211>20
<212>DNA
<400>1953
gctatagtta cagcttgggg 20
<210>1954
<211>20
<212>DNA
<400>1954
gaacttgaga tcttccctt 20
<210>1955
<211>20
<212>DNA
<400>1955
tccacgtcag catctgtcat 20
<210>1956
<211>20
<212>DNA
<400>1956
cctcagcata agtgctacta 20
<210>1957
<211>20
<212>DNA
<400>1957
ctccttggcg tgtaggaata 20
<210>1958
<211>20
<212>DNA
<400>1958
gctcgcattc gtcacaaaga 20
<210>1959
<211>20

<212>DNA
 <400>1959
 cagtaatagc ggatgcatcg 20
 <210>1960
 <211>20
 <212>DNA
 <400>1960
 aatcgcaa at ggaatcgcg 20
 <210>1961
 <211>20
 <212>DNA
 <400>1961
 ggataaggct tatctggaga 20
 <210>1962
 <211>20
 <212>DNA
 <400>1962
 gacgaacttc ttggtgacga 20
 <210>1963
 <211>20
 <212>DNA
 <400>1963
 cccccagaaa tctcctagaa 20
 <210>1964
 <211>20
 <212>DNA
 <400>1964
 gtaggcctaa ttaactcggg 20
 <210>1965
 <211>20
 <212>DNA
 <400>1965
 catcgatctc atgcgacact 20
 <210>1966
 <211>20
 <212>DNA
 <400>1966
 gcctctattc tgtaccagga 20
 <210>1967
 <211>20
 <212>DNA
 <400>1967
 ctacctatgg aacactgagc 20
 <210>1968
 <211>20
 <212>DNA
 <400>1968
 gagctcgcaa aagctgtggt 20
 <210>1969
 <211>20
 <212>DNA
 <400>1969
 aagcggctag aacagcagtg 20
 <210>1970
 <211>20
 <212>DNA
 <400>1970
 ggtcgagtgt ttcttcggat 20
 <210>1971
 <211>20
 <212>DNA
 <400>1971
 gtatcctgcc gtggttagctt 20
 <210>1972

<211>20
<212>DNA
<400>1972
gagcagaccg atagagggat 20
<210>1973
<211>20
<212>DNA
<400>1973
ccatagcaat agtgattccg 20
<210>1974
<211>20
<212>DNA
<400>1974
atgacaccct accaaagcga 20
<210>1975
<211>20
<212>DNA
<400>1975
agggggtgat ttctgaaagc 20
<210>1976
<211>20
<212>DNA
<400>1976
ccgcgaagca gaatctgtat 20
<210>1977
<211>20
<212>DNA
<400>1977
cgactcaaga aacgaggaag 20
<210>1978
<211>20
<212>DNA
<400>1978
gaaggtgttc ttaccacta 20
<210>1979
<211>20
<212>DNA
<400>1979
gcaagcttac ctaaacacac 20
<210>1980
<211>20
<212>DNA
<400>1980
cagaaacgga cagggtatca 20
<210>1981
<211>20
<212>DNA
<400>1981
gcctgatata cagaagcact 20
<210>1982
<211>20
<212>DNA
<400>1982
ataggaaatg cgggcgtacc 20
<210>1983
<211>20
<212>DNA
<400>1983
gcaagagggt ccaacaaact 20
<210>1984
<211>20
<212>DNA
<400>1984
ctcttccagg agccgttcaa 20

WO 99/27105

PCT/IB98/01890

<210>1985
 <211>20
 <212>DNA
 <400>1985
 gggaaagatg ccttaggact 20
 <210>1986
 <211>20
 <212>DNA
 <400>1986
 gcagtgggtct ttaggactca 20
 <210>1987
 <211>20
 <212>DNA
 <400>1987
 cctcgcccaa ggttttattg 20
 <210>1988
 <211>20
 <212>DNA
 <400>1988
 ggaagtactg aaggatctgt 20
 <210>1989
 <211>20
 <212>DNA
 <400>1989
 cgccagtttt tcattctcgac 20
 <210>1990
 <211>20
 <212>DNA
 <400>1990
 cgtcttgctt caagtagctt 20
 <210>1991
 <211>20
 <212>DNA
 <400>1991
 agcaatggag ctctaacagc 20
 <210>1992
 <211>20
 <212>DNA
 <400>1992
 cggttccttc ttgaaactct 20
 <210>1993
 <211>20
 <212>DNA
 <400>1993
 tgaaggcgtt acctacgctc 20
 <210>1994
 <211>20
 <212>DNA
 <400>1994
 ccgcattgcta gttcttagca 20
 <210>1995
 <211>20
 <212>DNA
 <400>1995
 agtatatttcc cccatcctgc 20
 <210>1996
 <211>20
 <212>DNA
 <400>1996
 cttcttttgg atccactcct 20
 <210>1997
 <211>20
 <212>DNA
 <400>1997

WO 99/27105

PCT/IB98/01890

gactacgaca atgctcgcat 20
 <210>1998
 <211>20
 <212>DNA
 <400>1998
 cgcaatcttt cactccacca 20
 <210>1999
 <211>20
 <212>DNA
 <400>1999
 gcgatccaga ctttccaatc 20
 <210>2000
 <211>20
 <212>DNA
 <400>2000
 ggccgcagta tttccatact 20
 <210>2001
 <211>20
 <212>DNA
 <400>2001
 ctagggacaa agagaaagag 20
 <210>2002
 <211>20
 <212>DNA
 <400>2002
 ctggccgact ctcccctatg 20
 <210>2003
 <211>20
 <212>DNA
 <400>2003
 cagcttttagc agcagcatag 20
 <210>2004
 <211>20
 <212>DNA
 <400>2004
 gctatagctt tctctgcagc 20
 <210>2005
 <211>20
 <212>DNA
 <400>2005
 ccaccaagc ctgttaaact 20
 <210>2006
 <211>20
 <212>DNA
 <400>2006
 gagttatttg agcgacaagg 20
 <210>2007
 <211>20
 <212>DNA
 <400>2007
 acatattggc tcccttgtec 20
 <210>2008
 <211>20
 <212>DNA
 <400>2008
 cccttcgctc caaccgagac 20
 <210>2009
 <211>20
 <212>DNA
 <400>2009
 ggaaatcaag tcgttcctga 20
 <210>2010
 <211>20
 <212>DNA

WO 99/27105

PCT/IB98/01890

<400>2010
 gcgtaccagt ctcagtacta 20
 <210>2011
 <211>20
 <212>DNA
 <400>2011
 gaggttttgc caaaacgcct 20
 <210>2012
 <211>20
 <212>DNA
 <400>2012
 acctctccag gcatttatgg 20
 <210>2013
 <211>20
 <212>DNA
 <400>2013
 gagactacag ttcggggata 20
 <210>2014
 <211>20
 <212>DNA
 <400>2014
 ccgtctatcg aatccacgta 20
 <210>2015
 <211>20
 <212>DNA
 <400>2015
 gcaacatgcc cacctaaaga 20
 <210>2016
 <211>20
 <212>DNA
 <400>2016
 ccgatttcga gggcattcta 20
 <210>2017
 <211>20
 <212>DNA
 <400>2017
 gtccgcaata gttgcatgac 20
 <210>2018
 <211>20
 <212>DNA
 <400>2018
 atgactggag ggaagttttc 20
 <210>2019
 <211>20
 <212>DNA
 <400>2019
 cccctccaa acctatagaa 20
 <210>2020
 <211>20
 <212>DNA
 <400>2020
 cggtacgaaa aacttcacgc 20
 <210>2021
 <211>20
 <212>DNA
 <400>2021
 cgtccatgtg atgtaatcct 20
 <210>2022
 <211>20
 <212>DNA
 <400>2022
 caggccactt tgcctaattgt 20
 <210>2023
 <211>20

WO 99/27105

PCT/IB98/01890

<212>DNA
 <400>2023
 cgggcccgcct tccgtgtatta 20
 <210>2024
 <211>20
 <212>DNA
 <400>2024
 taacaagctg ccagctctccc 20
 <210>2025
 <211>20
 <212>DNA
 <400>2025
 agactccaag tcagccaaga 20
 <210>2026
 <211>20
 <212>DNA
 <400>2026
 gctcttgttc ttgacggaga 20
 <210>2027
 <211>20
 <212>DNA
 <400>2027
 gcctgcgccc tattatagaa 20
 <210>2028
 <211>20
 <212>DNA
 <400>2028
 gcccgtttca tagagtcaac 20
 <210>2029
 <211>20
 <212>DNA
 <400>2029
 tgctcagcca tagaaactcg 20
 <210>2030
 <211>20
 <212>DNA
 <400>2030
 ccttaggaat cggccattgt 20
 <210>2031
 <211>20
 <212>DNA
 <400>2031
 ggcaaaggaa cggatcaatg 20
 <210>2032
 <211>20
 <212>DNA
 <400>2032
 gaacacgaat gggcttattg 20
 <210>2033
 <211>20
 <212>DNA
 <400>2033
 gcccgtttca tagagtcaac 20
 <210>2034
 <211>20
 <212>DNA
 <400>2034
 cagctagcgt ctgttctgaa 20
 <210>2035
 <211>20
 <212>DNA
 <400>2035
 cgaggctcct cgtaataaga 20
 <210>2036

<211>20
<212>DNA
<400>2036
cgaccaagta actgattccc 20
<210>2037
<211>20
<212>DNA
<400>2037
gcaaggtctc atatccagga 20
<210>2038
<211>20
<212>DNA
<400>2038
gcgtagctgg cttttggaaa 20
<210>2039
<211>20
<212>DNA
<400>2039
gggtatagga aagaactcgg 20
<210>2040
<211>20
<212>DNA
<400>2040
cagctgagtc tatcttctga 20
<210>2041
<211>20
<212>DNA
<400>2041
ggaatatagt cgcttcctga 20
<210>2042
<211>20
<212>DNA
<400>2042
ccttcatttg caggtcgctt 20
<210>2043
<211>20
<212>DNA
<400>2043
ccaacacgaa ctgcgtagtt 20
<210>2044
<211>20
<212>DNA
<400>2044
gcgccaaatc ctgtttctct 20
<210>2045
<211>20
<212>DNA
<400>2045
gccttctctt tagtccttcg 20
<210>2046
<211>20
<212>DNA
<400>2046
ctgacaagcc ctttgcaaaa 20
<210>2047
<211>20
<212>DNA
<400>2047
gacgagaatt tatggggtgc 20
<210>2048
<211>20
<212>DNA
<400>2048
tctgaaaatg gtggagcgga 20

<210>2049
<211>20
<212>DNA
<400>2049
ccttcctacc tggatcacia 20
<210>2050
<211>20
<212>DNA
<400>2050
cgagctcgaa gtacaacgta 20
<210>2051
<211>20
<212>DNA
<400>2051
ccctacggag ctttcattga 20
<210>2052
<211>20
<212>DNA
<400>2052
cgatcctttc ttcgctcgtga 20
<210>2053
<211>20
<212>DNA
<400>2053
gatccttgag caagtcagca 20
<210>2054
<211>20
<212>DNA
<400>2054
gatgaagggt ctgctgagat 20
<210>2055
<211>20
<212>DNA
<400>2055
gctgaacctt aaagcgctcg 20
<210>2056
<211>20
<212>DNA
<400>2056
gcactctgca cgtgtttatg 20
<210>2057
<211>20
<212>DNA
<400>2057
cgtcaaagat ctggcaacag 20
<210>2058
<211>20
<212>DNA
<400>2058
cagttcaagt tcacttgca 20
<210>2059
<211>20
<212>DNA
<400>2059
cgcaaaaaca ggagaagggtc 20
<210>2060
<211>20
<212>DNA
<400>2060
ctacctgtca ggggtgttatg 20
<210>2061
<211>20
<212>DNA
<400>2061

gtcaaagaag ttcgcaaagg 20
<210>2062
<211>20
<212>DNA
<400>2062
gcagcacgca ctaatctatg 20
<210>2063
<211>20
<212>DNA
<400>2063
gactatggat cttgcagtag 20
<210>2064
<211>20
<212>DNA
<400>2064
cgattgaagt tttccctacc 20
<210>2065
<211>20
<212>DNA
<400>2065
gactgggtag gtgtccttac 20
<210>2066
<211>20
<212>DNA
<400>2066
tttggatgat gggcgttgtc 20
<210>2067
<211>20
<212>DNA
<400>2067
cgtgtgtaac gtctggatca 20
<210>2068
<211>20
<212>DNA
<400>2068
gcaggttctt accttgcctt 20
<210>2069
<211>20
<212>DNA
<400>2069
caatttcgtc agcagaacac 20
<210>2070
<211>20
<212>DNA
<400>2070
gaagctggaa aggctgagaa 20
<210>2071
<211>20
<212>DNA
<400>2071
gctggatga ttgatgccac 20
<210>2072
<211>20
<212>DNA
<400>2072
tccgcaatct cataggagac 20
<210>2073
<211>20
<212>DNA
<400>2073
ggcattcatg ttcgcacaga 20
<210>2074
<211>20
<212>DNA

<400>2074
ctctgtaaat ggctcgttcc 20
<210>2075
<211>20
<212>DNA
<400>2075
ccattgcaaa agcttacgga 20
<210>2076
<211>20
<212>DNA
<400>2076
ccttccttag aagaactcgc 20
<210>2077
<211>20
<212>DNA
<400>2077
ccatgtccct gtgcaaatag 20
<210>2078
<211>20
<212>DNA
<400>2078
cgccgtggtt atagctatac 20
<210>2079
<211>20
<212>DNA
<400>2079
cctgaccttc atgttttggg 20
<210>2080
<211>20
<212>DNA
<400>2080
tcccttcgtt atcgatgccc 20
<210>2081
<211>20
<212>DNA
<400>2081
acaggaaaga gacctcgccg 20
<210>2082
<211>20
<212>DNA
<400>2082
ggtctaaagg aagattctcc 20
<210>2083
<211>20
<212>DNA
<400>2083
cagtctccaa catgacttcc 20
<210>2084
<211>20
<212>DNA
<400>2084
cttgcttttg tccgagtagc 20
<210>2085
<211>20
<212>DNA
<400>2085
cttccccatg gatatcaggg 20
<210>2086
<211>20
<212>DNA
<400>2086
ctctttcttag gcttccccat 20
<210>2087
<211>20


```

<212>DNA
<400>2087
gttcctccct ggaaacgatg      20
<210>2088
<211>20
<212>DNA
<400>2088
agccgccttg gtcattgtga      20
<210>2089
<211>20
<212>DNA
<400>2089
tctatcatgc cttcgttgcc      20
<210>2090
<211>20
<212>DNA
<400>2090
cggaaaacct cccagaaatc      20
<210>2091
<211>20
<212>DNA
<400>2091
gccacctgaa actgccataa      20
<210>2092
<211>20
<212>DNA
<400>2092
gcagcaggta cgatcttaga      20
<210>2093
<211>20
<212>DNA
<400>2093
taagggaactg gtactcgctc      20
<210>2094
<211>20
<212>DNA
<400>2094
cccccataat tggggacaaa      20
<210>2095
<211>20
<212>DNA
<400>2095
atgtggacgg gcttcaccct      20
<210>2096
<211>20
<212>DNA
<400>2096
gagaggcgta gcccttcata      20
<210>2097
<211>20
<212>DNA
<400>2097
gccctcatga tgcaaaagca      20
<210>2098
<211>20
<212>DNA
<400>2098
ggaaaggtaa gcatggctgt      20
<210>2099
<211>20
<212>DNA
<400>2099
gaagcagcag gtacgatctt      20
<210>2100

```

<211>20
<212>DNA
<400>2100
ccttcggatc ttcccatttc 20
<210>2101
<211>20
<212>DNA
<400>2101
gaggaatcaa agtcatgccc 20
<210>2102
<211>20
<212>DNA
<400>2102
ctgggtcaga ctctgattac 20
<210>2103
<211>20
<212>DNA
<400>2103
cgctatttcc attccctcca 20
<210>2104
<211>20
<212>DNA
<400>2104
gggggattaa aggaaacctc 20
<210>2105
<211>20
<212>DNA
<400>2105
ctgacggaaa gcgttttagca 20
<210>2106
<211>20
<212>DNA
<400>2106
ccacacgagt catacctaca 20
<210>2107
<211>20
<212>DNA
<400>2107
ctcactggct cctaaactca 20
<210>2108
<211>20
<212>DNA
<400>2108
ctgatacgaa catagcctcc 20
<210>2109
<211>20
<212>DNA
<400>2109
ccacacgagt catacctaca 20
<210>2110
<211>20
<212>DNA
<400>2110
gctaacggag caaactcctg 20
<210>2111
<211>20
<212>DNA
<400>2111
ccctaggttg acgagaaaag 20
<210>2112
<211>20
<212>DNA
<400>2112
ggacagtatg agagacagca 20

<210>2113
<211>20
<212>DNA
<400>2113
gagtggcagg cataaacctt 20
<210>2114
<211>20
<212>DNA
<400>2114
atttgtcgat accaccacca 20
<210>2115
<211>20
<212>DNA
<400>2115
cgcaagtcca ggaattgtca 20
<210>2116
<211>20
<212>DNA
<400>2116
cagcacaccc aaacaacaca 20
<210>2117
<211>20
<212>DNA
<400>2117
gaccaagcca taagactcct 20
<210>2118
<211>20
<212>DNA
<400>2118
atgcgctgac gcaccttctt 20
<210>2119
<211>20
<212>DNA
<400>2119
cccaaagcca ttagacttcc 20
<210>2120
<211>20
<212>DNA
<400>2120
tttactttac gatttttatg 20
<210>2121
<211>20
<212>DNA
<400>2121
cagtagggcc acaacaaatc 20
<210>2122
<211>20
<212>DNA
<400>2122
gctgtaagct ctcccaacct 20
<210>2123
<211>20
<212>DNA
<400>2123
cccctcctaa ttcttctgtg 20
<210>2124
<211>20
<212>DNA
<400>2124
ggagctatga ccccttatct 20
<210>2125
<211>20
<212>DNA
<400>2125

WO 99/27105

PCT/IB98/01890

agaatcggaa accccaacgca 20
 <210>2126
 <211>20
 <212>DNA
 <400>2126
 cgagtgcctt tgttcagaag 20
 <210>2127
 <211>20
 <212>DNA
 <400>2127
 ctcttgggta ttgcctatgg 20
 <210>2128
 <211>20
 <212>DNA
 <400>2128
 aggggctcgc ccttttttta 20
 <210>2129
 <211>20
 <212>DNA
 <400>2129
 ggttgctcga gctatacaga 20
 <210>2130
 <211>20
 <212>DNA
 <400>2130
 ccgtcgtcag tcaaccaata 20
 <210>2131
 <211>20
 <212>DNA
 <400>2131
 ggaacaggct cagatgattc 20
 <210>2132
 <211>20
 <212>DNA
 <400>2132
 gctctctctt acccttcaga 20
 <210>2133
 <211>20
 <212>DNA
 <400>2133
 ccctctcttc aagaggatga 20
 <210>2134
 <211>20
 <212>DNA
 <400>2134
 cccgtgtttt gttggtttgc 20
 <210>2135
 <211>20
 <212>DNA
 <400>2135
 taaaacgatc cgtcgtcagt 20
 <210>2136
 <211>20
 <212>DNA
 <400>2136
 ctagccactc tggaactcta 20
 <210>2137
 <211>20
 <212>DNA
 <400>2137
 gtcatgctca tagccaactc 20
 <210>2138
 <211>20
 <212>DNA

<400>2138
gcaaagtgtt atggcggaga 20
<210>2139
<211>20
<212>DNA
<400>2139
cactctggaa ctctacctca 20
<210>2140
<211>20
<212>DNA
<400>2140
ggaaagggga actccagaat 20
<210>2141
<211>20
<212>DNA
<400>2141
cccttacgtt ggcattatgg 20
<210>2142
<211>20
<212>DNA
<400>2142
ctttcgtggt ctctccaatg 20
<210>2143
<211>20
<212>DNA
<400>2143
cccctcaaga atatctgagc 20
<210>2144
<211>20
<212>DNA
<400>2144
ggattccaaa cctgcggtaa 20
<210>2145
<211>20
<212>DNA
<400>2145
ccggatcttt caatgctagg 20
<210>2146
<211>20
<212>DNA
<400>2146
caaggcacca cctatctaac 20
<210>2147
<211>20
<212>DNA
<400>2147
aagaacagca gggacggccc 20
<210>2148
<211>20
<212>DNA
<400>2148
ggcatccctg aaatcaaacg 20
<210>2149
<211>20
<212>DNA
<400>2149
cgtctgtaca cgcctatcaa 20
<210>2150
<211>20
<212>DNA
<400>2150
gagaatccct gcctttttctc 20
<210>2151
<211>20

<212>DNA
<400>2151
cagtagaagt tccaaacctc 20
<210>2152
<211>20
<212>DNA
<400>2152
ggtggctgtg tcaaagttac 20
<210>2153
<211>20
<212>DNA
<400>2153
ttctctaaca aggaggcgag 20
<210>2154
<211>20
<212>DNA
<400>2154
gtctccacca acctacagta 20
<210>2155
<211>20
<212>DNA
<400>2155
aataagagtg gctgcagcac 20
<210>2156
<211>20
<212>DNA
<400>2156
caagatcttt ccatgacgca 20
<210>2157
<211>20
<212>DNA
<400>2157
cagcttggtt agcgcggttg 20
<210>2158
<211>20
<212>DNA
<400>2158
gggtagaatc gttccccata 20
<210>2159
<211>20
<212>DNA
<400>2159
ccctctgcat tactcacaga 20
<210>2160
<211>20
<212>DNA
<400>2160
ctggactctc caagatccta 20
<210>2161
<211>20
<212>DNA
<400>2161
gtacagtaga ttcgcgaacg 20
<210>2162
<211>20
<212>DNA
<400>2162
ccgtacgtag tgggtaaatg 20
<210>2163
<211>20
<212>DNA
<400>2163
ctgccattgc agtccttget 20
<210>2164

<211>20
<212>DNA
<400>2164
ccgccccgtt tcgatctaac 20
<210>2165
<211>20
<212>DNA
<400>2165
cctgaaaacc tcaggaagag 20
<210>2166
<211>20
<212>DNA
<400>2166
cccctgggta agcaaaagag 20
<210>2167
<211>20
<212>DNA
<400>2167
ctcccagaaa ggagggggaa 20
<210>2168
<211>20
<212>DNA
<400>2168
gaacaactgc tgaacagcag 20
<210>2169
<211>20
<212>DNA
<400>2169
tatgtcggaa agcgtccgtg 20
<210>2170
<211>20
<212>DNA
<400>2170
gttccttacg aatcgtcctc 20
<210>2171
<211>20
<212>DNA
<400>2171
caggctaaca cagatatgcc 20
<210>2172
<211>20
<212>DNA
<400>2172
cctaccagga ctttaagatcg 20
<210>2173
<211>20
<212>DNA
<400>2173
gggattcgtt ctacgaacac 20
<210>2174
<211>20
<212>DNA
<400>2174
cccaatctca caggccaaca 20
<210>2175
<211>20
<212>DNA
<400>2175
ggaatggtag cctcagcaat 20
<210>2176
<211>20
<212>DNA
<400>2176
gaggaagcag atgcactttc 20

WO 99/27105

PCT/IB98/01890

<210>2177
 <211>20
 <212>DNA
 <400>2177
 ccatcaagtg ccttgccctat 20
 <210>2178
 <211>20
 <212>DNA
 <400>2178
 cttgatcata ccgggaaacc 20
 <210>2179
 <211>20
 <212>DNA
 <400>2179
 tateccttcca cactcaccct 20
 <210>2180
 <211>20
 <212>DNA
 <400>2180
 ccaaaatccc cacttgcggg 20
 <210>2181
 <211>20
 <212>DNA
 <400>2181
 ctgtcacccgt aggtactatg 20
 <210>2182
 <211>20
 <212>DNA
 <400>2182
 cccccctac aggaacaaca 20
 <210>2183
 <211>20
 <212>DNA
 <400>2183
 cgaagcttta ggcttcctc 20
 <210>2184
 <211>20
 <212>DNA
 <400>2184
 ccgagctgat acccttcaaa 20
 <210>2185
 <211>20
 <212>DNA
 <400>2185
 gcaccattag caaaatcccc 20
 <210>2186
 <211>20
 <212>DNA
 <400>2186
 ggcaccaaga agaaatccga 20
 <210>2187
 <211>20
 <212>DNA
 <400>2187
 agagtctcgc gatccaaaga 20
 <210>2188
 <211>20
 <212>DNA
 <400>2188
 gcgatgcac cccatagaaa 20
 <210>2189
 <211>20
 <212>DNA
 <400>2189

ttctagctga gatgagcctc 20
<210>2190
<211>20
<212>DNA
<400>2190
taaatagaca gggccgtctc 20
<210>2191
<211>20
<212>DNA
<400>2191
ggggcaagcg ttgaaatttg 20
<210>2192
<211>20
<212>DNA
<400>2192
ctgacaatga taccggggat 20
<210>2193
<211>20
<212>DNA
<400>2193
ggcgtaatac ggacttcaca 20
<210>2194
<211>20
<212>DNA
<400>2194
gtgctgtcat caacgctcta 20
<210>2195
<211>20
<212>DNA
<400>2195
ttcggactcc tgatgctccg 20
<210>2196
<211>20
<212>DNA
<400>2196
ccgtgtttta cgataggctc 20
<210>2197
<211>20
<212>DNA
<400>2197
cggaatctct ctctagactg 20
<210>2198
<211>20
<212>DNA
<400>2198
cgcctgggaa aagtcatcaa 20
<210>2199
<211>20
<212>DNA
<400>2199
tgttggtggt gaagatcgag 20
<210>2200
<211>20
<212>DNA
<400>2200
cgcctgggaa aagtcatcaa 20
<210>2201
<211>20
<212>DNA
<400>2201
ttggggatag aggttcggtt 20
<210>2202
<211>20
<212>DNA

<400>2202
ccgcaacttt ttttagcaggc 20
<210>2203
<211>20
<212>DNA
<400>2203
ctgaaaaagc ctgcacagga 20
<210>2204
<211>20
<212>DNA
<400>2204
ggctgacgcc tctaaaagat 20
<210>2205
<211>20
<212>DNA
<400>2205
gatccctctt caatactacg 20
<210>2206
<211>20
<212>DNA
<400>2206
gcctaagagg acaatgcgtt 20
<210>2207
<211>20
<212>DNA
<400>2207
gccatgcttt ctcgtagctg 20
<210>2208
<211>20
<212>DNA
<400>2208
ccagaggctt gagcatgaaa 20
<210>2209
<211>20
<212>DNA
<400>2209
cgctctctta gctgtagtct 20
<210>2210
<211>20
<212>DNA
<400>2210
cgctcttcag gatctgcccc 20
<210>2211
<211>20
<212>DNA
<400>2211
cgaacaccaa aacctgaagc 20
<210>2212
<211>20
<212>DNA
<400>2212
ggtgaagaga gaactcacca 20
<210>2213
<211>20
<212>DNA
<400>2213
ggtctaaacc tccagagtca 20
<210>2214
<211>20
<212>DNA
<400>2214
cgccctggaa atttcttagc 20
<210>2215
<211>20

<212>DNA
 <400>2215
 gacatgaggg aatctccttg 20
 <210>2216
 <211>20
 <212>DNA
 <400>2216
 ggccttgaat cgctgtgtct 20
 <210>2217
 <211>20
 <212>DNA
 <400>2217
 ttatgcctct gatccttgcg 20
 <210>2218
 <211>20
 <212>DNA
 <400>2218
 cctacctgaa gttctcccta 20
 <210>2219
 <211>20
 <212>DNA
 <400>2219
 gcaagcagat agagcttctt 20
 <210>2220
 <211>20
 <212>DNA
 <400>2220
 ccgcctatct cgagaattca 20
 <210>2221
 <211>20
 <212>DNA
 <400>2221
 ctgagaatcc tgagatactc 20
 <210>2222
 <211>20
 <212>DNA
 <400>2222
 ggagttacgt acagaagagc 20
 <210>2223
 <211>20
 <212>DNA
 <400>2223
 gaggagcggg ctaaaatctc 20
 <210>2224
 <211>20
 <212>DNA
 <400>2224
 cacctcagga gctgatgtta 20
 <210>2225
 <211>20
 <212>DNA
 <400>2225
 agatggccct aaatgccgat 20
 <210>2226
 <211>20
 <212>DNA
 <400>2226
 cctggcaact ctgcataaa 20
 <210>2227
 <211>20
 <212>DNA
 <400>2227
 ccgtagcccc tcttattctt 20
 <210>2228

```

<211>20
<212>DNA
<400>2228
gaggacacgg ccctgaaacg 20
<210>2229
<211>20
<212>DNA
<400>2229
ccagattacg ctcctttcac 20
<210>2230
<211>20
<212>DNA
<400>2230
cgaagaactg cctatgcaaa 20
<210>2231
<211>20
<212>DNA
<400>2231
aagcagagag gcgattcccc 20
<210>2232
<211>20
<212>DNA
<400>2232
gtctgtacgt gttcgcgttt 20
<210>2233
<211>20
<212>DNA
<400>2233
catcgccctc acgagtattg 20
<210>2234
<211>20
<212>DNA
<400>2234
gggtttgttta acctcacctc 20
<210>2235
<211>20
<212>DNA
<400>2235
gttagctctt agtggttgcg 20
<210>2236
<211>20
<212>DNA
<400>2236
gccctctcgt tctaacagaa 20
<210>2237
<211>20
<212>DNA
<400>2237
gagacggtct ctttgcttgt 20
<210>2238
<211>20
<212>DNA
<400>2238
cccaatccct ccataaactt 20
<210>2239
<211>20
<212>DNA
<400>2239
gtggatcatc atcatcccag 20
<210>2240
<211>20
<212>DNA
<400>2240
ttctcaaaac atcgtgcagc 20

```

<210>2241
<211>20
<212>DNA
<400>2241
atgacgtacc ggcaatacga 20
<210>2242
<211>20
<212>DNA
<400>2242
cgactacgga cctaaagaac 20
<210>2243
<211>20
<212>DNA
<400>2243
cctcgtgaaa ttcctgacac 20
<210>2244
<211>20
<212>DNA
<400>2244
cacacaactc gccgcatccg 20
<210>2245
<211>20
<212>DNA
<400>2245
cgcggttgct gtagcataac 20
<210>2246
<211>20
<212>DNA
<400>2246
ggattcgtca aacaacctcc 20
<210>2247
<211>20
<212>DNA
<400>2247
gctcggcact tacttcaaga 20
<210>2248
<211>20
<212>DNA
<400>2248
caggaccttt agcaagccga 20
<210>2249
<211>20
<212>DNA
<400>2249
aaaccatcca cacaactcgc 20
<210>2250
<211>20
<212>DNA
<400>2250
agcacaccct agaagggtat 20
<210>2251
<211>20
<212>DNA
<400>2251
ggcggattca tgctaaagat 20
<210>2252
<211>20
<212>DNA
<400>2252
ccctaacgcc gaaaacttct 20
<210>2253
<211>20
<212>DNA
<400>2253

tggatacggga gggggcatga 20
<210>2254
<211>20
<212>DNA
<400>2254
cagctcgttt actccatctc 20
<210>2255
<211>20
<212>DNA
<400>2255
ggtgcggaac tcatacaaat 20
<210>2256
<211>20
<212>DNA
<400>2256
gagctctaga tgacgtagtg 20
<210>2257
<211>20
<212>DNA
<400>2257
gagccgctca tacacctttt 20
<210>2258
<211>20
<212>DNA
<400>2258
gggcagactt tggagagcta 20
<210>2259
<211>20
<212>DNA
<400>2259
ccctaacgcc gaaaacttct 20
<210>2260
<211>20
<212>DNA
<400>2260
ctctgggttac ctctccagta 20
<210>2261
<211>20
<212>DNA
<400>2261
ggctcttcaa gagcaacaag 20
<210>2262
<211>20
<212>DNA
<400>2262
ggcatcagag actgtaagtg 20
<210>2263
<211>20
<212>DNA
<400>2263
gctaatagcc tcacaagcag 20
<210>2264
<211>20
<212>DNA
<400>2264
ggctacaaaa gcggatgaag 20
<210>2265
<211>20
<212>DNA
<400>2265
ggcatcagag actgtaagtg 20
<210>2266
<211>20
<212>DNA

<400>2266
cccaaggagt caaatccgaa 20
<210>2267
<211>20
<212>DNA
<400>2267
cagcacatcc cctcatgatg 20
<210>2268
<211>20
<212>DNA
<400>2268
cttatcttgg cacgcataga 20
<210>2269
<211>20
<212>DNA
<400>2269
catggaagct gcttcgctat 20
<210>2270
<211>20
<212>DNA
<400>2270
gcgcaatcac tataaaccat 20
<210>2271
<211>20
<212>DNA
<400>2271
tttcgtgtgg aagaagttcc 20
<210>2272
<211>20
<212>DNA
<400>2272
gaggtttata acccatccgc 20
<210>2273
<211>20
<212>DNA
<400>2273
gaagcggcta caaaagcgga 20
<210>2274
<211>20
<212>DNA
<400>2274
acacagcctt acctccccct 20
<210>2275
<211>20
<212>DNA
<400>2275
accgtcaaag caagagacag 20
<210>2276
<211>20
<212>DNA
<400>2276
atatcgacag cgaaaggctg 20
<210>2277
<211>20
<212>DNA
<400>2277
ccgtctcctc aagactttgg 20
<210>2278
<211>20
<212>DNA
<400>2278
cgggaagagc tgctatttcc 20
<210>2279
<211>20

<212>DNA
<400>2279
agaggagtgt gcggtcagca 20
<210>2280
<211>20
<212>DNA
<400>2280
cgcacgttcg gacataagaa 20
<210>2281
<211>20
<212>DNA
<400>2281
ctggatcaca ggattgatcg 20
<210>2282
<211>20
<212>DNA
<400>2282
ctcactcgag ggaagttttc 20
<210>2283
<211>20
<212>DNA
<400>2283
tgcccccttcg aaaaggatca 20
<210>2284
<211>20
<212>DNA
<400>2284
cctaacgaaa ccaacgatcc 20
<210>2285
<211>20
<212>DNA
<400>2285
gggaaaacgc caagaagagc 20
<210>2286
<211>20
<212>DNA
<400>2286
gggaaactca cgctctaaag 20
<210>2287
<211>20
<212>DNA
<400>2287
ctggggagat gatgagttag 20
<210>2288
<211>20
<212>DNA
<400>2288
ctcctacgta ttgacggaac 20
<210>2289
<211>20
<212>DNA
<400>2289
gcgtttacct gcggaggaag 20
<210>2290
<211>20
<212>DNA
<400>2290
ggctacatag acgtgtttcg 20
<210>2291
<211>20
<212>DNA
<400>2291
tgcccgctcc tacaaccctt 20
<210>2292

WO 99/27105

PCT/IB98/01890

<211>20
 <212>DNA
 <400>2292
 cggaggactt gcttttggtt 20
 <210>2293
 <211>20
 <212>DNA
 <400>2293
 tccctccaac gatagtttgc 20
 <210>2294
 <211>20
 <212>DNA
 <400>2294
 ggcaagagca attctatggg 20
 <210>2295
 <211>20
 <212>DNA
 <400>2295
 cctatccttt gggaaggact 20
 <210>2296
 <211>20
 <212>DNA
 <400>2296
 ggctgggtct tacttgatcat 20
 <210>2297
 <211>20
 <212>DNA
 <400>2297
 cagttcgatt ctgcctatgc 20
 <210>2298
 <211>20
 <212>DNA
 <400>2298
 ggctcattg ctatggcttt 20
 <210>2299
 <211>20
 <212>DNA
 <400>2299
 ctctgagggtt tectatcctg 20
 <210>2300
 <211>20
 <212>DNA
 <400>2300
 cagagtctca gttgagaacc 20
 <210>2301
 <211>20
 <212>DNA
 <400>2301
 gaaactccag gtttaggagc 20
 <210>2302
 <211>20
 <212>DNA
 <400>2302
 ggactagctg gatccataga 20
 <210>2303
 <211>20
 <212>DNA
 <400>2303
 ctctgacag tgtgagaatg 20
 <210>2304
 <211>20
 <212>DNA
 <400>2304
 caccttctgg agcttcgtta 20

<210>2305
<211>20
<212>DNA
<400>2305
gaactcctta tgggggtttcg 20
<210>2306
<211>20
<212>DNA
<400>2306
gctatactcc ttagggagtc 20
<210>2307
<211>20
<212>DNA
<400>2307
cggggaacgt acttaggtaa 20
<210>2308
<211>20
<212>DNA
<400>2308
ggagaagagc tcttttgcac 20
<210>2309
<211>20
<212>DNA
<400>2309
gctttcatgc gctaccttag 20
<210>2310
<211>20
<212>DNA
<400>2310
agagaatcgt cccaaccca 20
<210>2311
<211>20
<212>DNA
<400>2311
ccccctgttc tataaagcgt 20
<210>2312
<211>20
<212>DNA
<400>2312
gataccgttt cccatagagc 20
<210>2313
<211>20
<212>DNA
<400>2313
gctctgctta ggaacttgct 20
<210>2314
<211>20
<212>DNA
<400>2314
cctggagtgc acataaactc 20
<210>2315
<211>20
<212>DNA
<400>2315
cggactcaga gatctctaaa 20
<210>2316
<211>20
<212>DNA
<400>2316
agcgttcggc ctctgtcat 20
<210>2317
<211>20
<212>DNA
<400>2317

atttgctgcg gtactccaac 20
<210>2318
<211>20
<212>DNA
<400>2318
gccgctgaag attttcctga 20
<210>2319
<211>20
<212>DNA
<400>2319
cgacttctgg agattcgata 20
<210>2320
<211>20
<212>DNA
<400>2320
tcccagactc tgtgatttcc 20
<210>2321
<211>20
<212>DNA
<400>2321
ccaagagagg ttcgtaagga 20
<210>2322
<211>20
<212>DNA
<400>2322
cgctatcctc ttcccaattc 20
<210>2323
<211>20
<212>DNA
<400>2323
gctcacagaa gctgaaagtg 20
<210>2324
<211>20
<212>DNA
<400>2324
cagcagctcc atacgacagt 20
<210>2325
<211>20
<212>DNA
<400>2325
gcttgaagtc ccatatggac 20
<210>2326
<211>20
<212>DNA
<400>2326
cagaaacagc cgaaacggaa 20
<210>2327
<211>20
<212>DNA
<400>2327
ccctgatgtt gccctacaat 20
<210>2328
<211>20
<212>DNA
<400>2328
ctctgctcag gtacaatacc 20
<210>2329
<211>20
<212>DNA
<400>2329
aggaaacgag cgaacactct 20
<210>2330
<211>20
<212>DNA

<400>2330
cggttggtct attgggaatg 20
<210>2331
<211>20
<212>DNA
<400>2331
gggagaagat tcgacctgaa 20
<210>2332
<211>20
<212>DNA
<400>2332
ccctctcata agcgagtctt 20
<210>2333
<211>20
<212>DNA
<400>2333
gcgaaaaagg aatcgatcca 20
<210>2334
<211>20
<212>DNA
<400>2334
cagccaagcg tggtaaacg 20
<210>2335
<211>20
<212>DNA
<400>2335
tcgctgcatt tgcgggacac 20
<210>2336
<211>20
<212>DNA
<400>2336
ctgctatcgt cgttcctatc 20
<210>2337
<211>20
<212>DNA
<400>2337
ctggctatat aggtgcggat 20
<210>2338
<211>20
<212>DNA
<400>2338
ctcccctacc cttaagcatt 20
<210>2339
<211>20
<212>DNA
<400>2339
ggtcttagga gctcttaagg 20
<210>2340
<211>20
<212>DNA
<400>2340
cattcagcca actctttggc 20
<210>2341
<211>20
<212>DNA
<400>2341
gcccgagtaa ttcttcagca 20
<210>2342
<211>20
<212>DNA
<400>2342
gcaaactgtg gaactcgtta 20
<210>2343
<211>20

```

<212>DNA
<400>2343
cttagaggct attgatgggg      20
<210>2344
<211>20
<212>DNA
<400>2344
tgaaaccac tacgggtatc      20
<210>2345
<211>20
<212>DNA
<400>2345
agggtatcag agggggaggg      20
<210>2346
<211>20
<212>DNA
<400>2346
agcgatgcta actggatggc      20
<210>2347
<211>20
<212>DNA
<400>2347
acagcactga caactgttcg      20
<210>2348
<211>20
<212>DNA
<400>2348
gaagtacgaa gttcttcacg      20
<210>2349
<211>20
<212>DNA
<400>2349
gctggaggtc ctactctatt      20
<210>2350
<211>20
<212>DNA
<400>2350
agctgcttat gagcttcgtg      20
<210>2351
<211>20
<212>DNA
<400>2351
ggagagactc ctactcttac      20
<210>2352
<211>20
<212>DNA
<400>2352
gacgaggaga agtcgaaaga      20
<210>2353
<211>20
<212>DNA
<400>2353
ctcttggtgg agacatcact      20
<210>2354
<211>20
<212>DNA
<400>2354
cgagagtgac accacgttta      20
<210>2355
<211>20
<212>DNA
<400>2355
ggatctctct tctcgatggg      20
<210>2356

```

<211>20
<212>DNA
<400>2356
gcaactctaa tctttgcagc 20
<210>2357
<211>20
<212>DNA
<400>2357
cgtggaaaac tacaggaacg 20
<210>2358
<211>20
<212>DNA
<400>2358
gccgtattag cagtaatcgg 20
<210>2359
<211>20
<212>DNA
<400>2359
ccgtctctgc aactctaadc 20
<210>2360
<211>20
<212>DNA
<400>2360
gcgctcgatt tattcccttc 20
<210>2361
<211>20
<212>DNA
<400>2361
cttcaccctc ataggcaaag 20
<210>2362
<211>20
<212>DNA
<400>2362
cctgtgtag tacttccgctc 20
<210>2363
<211>20
<212>DNA
<400>2363
tgcaacctccg atagcatatc 20
<210>2364
<211>20
<212>DNA
<400>2364
ccctagttct tctagggagt 20
<210>2365
<211>20
<212>DNA
<400>2365
ctctggaggc tttacagagt 20
<210>2366
<211>20
<212>DNA
<400>2366
aggtccctct atgcacacat 20
<210>2367
<211>20
<212>DNA
<400>2367
gatgttggtta ccaaactccg 20
<210>2368
<211>20
<212>DNA
<400>2368
cgaggcaca gcatcacaat 20

<210>2369
 <211>20
 <212>DNA
 <400>2369
 cggcgccata tctacccaca 20
 <210>2370
 <211>20
 <212>DNA
 <400>2370
 gagccctcta tggcaaaaag 20
 <210>2371
 <211>20
 <212>DNA
 <400>2371
 ctccaggaac cactctgctc 20
 <210>2372
 <211>20
 <212>DNA
 <400>2372
 cgtcacaatc ctgattgcga 20
 <210>2373
 <211>20
 <212>DNA
 <400>2373
 gcgctatcta tgctaacgga 20
 <210>2374
 <211>20
 <212>DNA
 <400>2374
 ccttattagg gaagggcctt 20
 <210>2375
 <211>20
 <212>DNA
 <400>2375
 ccaagtttgc cactctagga 20
 <210>2376
 <211>20
 <212>DNA
 <400>2376
 aggagcctct gctctccaac 20
 <210>2377
 <211>20
 <212>DNA
 <400>2377
 ctcgctttta gaaacggtgc 20
 <210>2378
 <211>20
 <212>DNA
 <400>2378
 ctccatagcgc aaatactctc 20
 <210>2379
 <211>20
 <212>DNA
 <400>2379
 gaggcattgc tctttctttc 20
 <210>2380
 <211>20
 <212>DNA
 <400>2380
 cccctctctt caagtctatt 20
 <210>2381
 <211>20
 <212>DNA
 <400>2381

cgttccaagg aaacatgctc 20
<210>2382
<211>20
<212>DNA
<400>2382
cgacaactac gtctttctcc 20
<210>2383
<211>20
<212>DNA
<400>2383
ctttcgggca gctttatgga 20
<210>2384
<211>20
<212>DNA
<400>2384
gcctgtaaag cagagtatcc 20
<210>2385
<211>20
<212>DNA
<400>2385
aggagtgctc ctaactgctc 20
<210>2386
<211>20
<212>DNA
<400>2386
ggagacctga gaaagggtgt 20
<210>2387
<211>20
<212>DNA
<400>2387
gcggattgca gcatctaaag 20
<210>2388
<211>20
<212>DNA
<400>2388
cgaacggtag aaatccaaga 20
<210>2389
<211>20
<212>DNA
<400>2389
cgaacggaat ctccagatcg 20
<210>2390
<211>20
<212>DNA
<400>2390
ctctgagatc ccaaaatccc 20
<210>2391
<211>20
<212>DNA
<400>2391
cgatctccaa agaactgacg 20
<210>2392
<211>20
<212>DNA
<400>2392
ccctgacagg gaattctgaa 20
<210>2393
<211>20
<212>DNA
<400>2393
tgcgtttcat tcgcgagact 20
<210>2394
<211>20
<212>DNA

<400>2394
catctgcaa gttcttctgct 20
<210>2395
<211>20
<212>DNA
<400>2395
taaccactcc atcccatga 20
<210>2396
<211>20
<212>DNA
<400>2396
cgtgggatac ctaagagaaa 20
<210>2397
<211>20
<212>DNA
<400>2397
cggcctgttt aattacagcg 20
<210>2398
<211>20
<212>DNA
<400>2398
cctgttggat taccgcattg 20
<210>2399
<211>20
<212>DNA
<400>2399
gggacaatcc ttcttccaga 20
<210>2400
<211>20
<212>DNA
<400>2400
gagaaccaag aggacgtgta 20
<210>2401
<211>20
<212>DNA
<400>2401
ttgagctgag tcacaagctg 20
<210>2402
<211>20
<212>DNA
<400>2402
cctgctgaga tattctgagg 20
<210>2403
<211>20
<212>DNA
<400>2403
tccacgtctc tgacggactg 20
<210>2404
<211>20
<212>DNA
<400>2404
cggatgtgca gattttctac 20
<210>2405
<211>20
<212>DNA
<400>2405
gaagtcgaac cctaagctgt 20
<210>2406
<211>20
<212>DNA
<400>2406
gcaaagagct tgatcctctg 20
<210>2407
<211>20

<212>DNA
 <400>2407
 gattcgctg cgtaatcagt 20
 <210>2408
 <211>20
 <212>DNA
 <400>2408
 cctagtctgg ctcacagaaa 20
 <210>2409
 <211>20
 <212>DNA
 <400>2409
 gggaggcata ttttctaccc 20
 <210>2410
 <211>20
 <212>DNA
 <400>2410
 ggatgactcc tgcagtgtat 20
 <210>2411
 <211>20
 <212>DNA
 <400>2411
 atcctccata cagaaacgcc 20
 <210>2412
 <211>20
 <212>DNA
 <400>2412
 ctcgacatct acgcaccatc 20
 <210>2413
 <211>20
 <212>DNA
 <400>2413
 ccatagacga taaccctgga 20
 <210>2414
 <211>20
 <212>DNA
 <400>2414
 ggggctatac atgcactaga 20
 <210>2415
 <211>20
 <212>DNA
 <400>2415
 cgatccctac gacagtatag 20
 <210>2416
 <211>20
 <212>DNA
 <400>2416
 cgcagcatta atcaggacga 20
 <210>2417
 <211>20
 <212>DNA
 <400>2417
 caaatcgggtg tcacgctact 20
 <210>2418
 <211>20
 <212>DNA
 <400>2418
 tcacgacact actcatcagc 20
 <210>2419
 <211>20
 <212>DNA
 <400>2419
 gccctaggag tcattatctc 20
 <210>2420

<211>20
<212>DNA
<400>2420
ggaacaacct caaacactgc 20
<210>2421
<211>20
<212>DNA
<400>2421
cctcgatcac cagaattcca 20
<210>2422
<211>20
<212>DNA
<400>2422
cctcatcaac gacgacacat 20
<210>2423
<211>20
<212>DNA
<400>2423
caggaattgc agccttcgat 20
<210>2424
<211>20
<212>DNA
<400>2424
ctccgattcc tgatgccata 20
<210>2425
<211>20
<212>DNA
<400>2425
agggggaacg gctcatatct 20
<210>2426
<211>20
<212>DNA
<400>2426
cgatcgactt ctatcccat 20
<210>2427
<211>20
<212>DNA
<400>2427
gcctgacctc tcctgtaaaa 20
<210>2428
<211>20
<212>DNA
<400>2428
acgagacccc cataccctcc 20
<210>2429
<211>20
<212>DNA
<400>2429
ggatacgatc tctaaagccc 20
<210>2430
<211>20
<212>DNA
<400>2430
gccaccaact gccataattg 20
<210>2431
<211>20
<212>DNA
<400>2431
gccgaagaag agctctgaga 20
<210>2432
<211>20
<212>DNA
<400>2432
ggaatttggt actggcgaga 20

<210>2433
<211>20
<212>DNA
<400>2433
atctttgagcc gcctacgcc 20
<210>2434
<211>20
<212>DNA
<400>2434
ggataagaaa aagagccccg 20
<210>2435
<211>20
<212>DNA
<400>2435
caaaccctt gcgaccctt 20
<210>2436
<211>20
<212>DNA
<400>2436
cagaagtcac tgcaagcccc 20
<210>2437
<211>20
<212>DNA
<400>2437
ggtcacttca tgacgactgt 20
<210>2438
<211>20
<212>DNA
<400>2438
caggacctt tggtaaccta 20
<210>2439
<211>20
<212>DNA
<400>2439
gggcaacatg aatcaagcgg 20
<210>2440
<211>20
<212>DNA
<400>2440
gtggaagctg aggggtgtttt 20
<210>2441
<211>20
<212>DNA
<400>2441
ctgggtccacc tgttcaatca 20
<210>2442
<211>20
<212>DNA
<400>2442
cgggatttcc tgtgcctaaa 20
<210>2443
<211>20
<212>DNA
<400>2443
ggaagaggag agagcaaacg 20
<210>2444
<211>20
<212>DNA
<400>2444
gtacgggtag gccttgaaat 20
<210>2445
<211>20
<212>DNA
<400>2445

cacggctgga aaagatttcc 20
<210>2446
<211>20
<212>DNA
<400>2446
cgacctgtgg gaaaatgaca 20
<210>2447
<211>20
<212>DNA
<400>2447
atcccgcaat caaaggggct 20
<210>2448
<211>20
<212>DNA
<400>2448
cctgagcatc cacataactca 20
<210>2449
<211>20
<212>DNA
<400>2449
gcagaggaac cctgactcat 20
<210>2450
<211>20
<212>DNA
<400>2450
gcccccccaa taacaagaat 20
<210>2451
<211>20
<212>DNA
<400>2451
tgtgcttcat agcgggcgac 20
<210>2452
<211>20
<212>DNA
<400>2452
gcgctctata cgctaaattc 20
<210>2453
<211>20
<212>DNA
<400>2453
ctcagcacag ttatatcccc 20
<210>2454
<211>20
<212>DNA
<400>2454
tgacgggggtg attctttctc 20
<210>2455
<211>20
<212>DNA
<400>2455
ggaacagagg ttgccataag 20
<210>2456
<211>20
<212>DNA
<400>2456
ggctaacgac gtcgctgcta 20
<210>2457
<211>20
<212>DNA
<400>2457
gcagaaatgg ctgaactcct 20
<210>2458
<211>20
<212>DNA

WO 99/27105

PCT/IB98/01890

```

<400>2458
ctctcttatac gacctgctct 20
<210>2459
<211>20
<212>DNA
<400>2459
cttttaggaat gggtaggaacg 20
<210>2460
<211>20
<212>DNA
<400>2460
gtgatggaga taacgtccag 20
<210>2461
<211>20
<212>DNA
<400>2461
taacagccaa ttggaagaac 20
<210>2462
<211>20
<212>DNA
<400>2462
agcttcttac caatctcacg 20
<210>2463
<211>20
<212>DNA
<400>2463
gacaacacac tgacaggcta 20
<210>2464
<211>20
<212>DNA
<400>2464
cctatgccct cttctgaaac 20
<210>2465
<211>20
<212>DNA
<400>2465
ctacgggtgct gagcttaaag 20
<210>2466
<211>20
<212>DNA
<400>2466
cgatcatgag ctaactctgg 20
<210>2467
<211>20
<212>DNA
<400>2467
ctctcgcgat cttctacctt 20
<210>2468
<211>20
<212>DNA
<400>2468
gatacccatc ggcaattcca 20
<210>2469
<211>20
<212>DNA
<400>2469
ctctgagctt acgctcttca 20
<210>2470
<211>20
<212>DNA
<400>2470
cctccattgt aaccagagag 20
<210>2471
<211>20

```

<212>DNA
<400>2471
ttccacgcct ctcgacgttc 20
<210>2472
<211>20
<212>DNA
<400>2472
cgaaggagag gtcctcattg 20
<210>2473
<211>20
<212>DNA
<400>2473
cggtcacgga aggattttcg 20
<210>2474
<211>20
<212>DNA
<400>2474
cctaccacac aagaatctgg 20
<210>2475
<211>20
<212>DNA
<400>2475
gcacgttggc aactttctct 20
<210>2476
<211>20
<212>DNA
<400>2476
cttcctaatac ggacctgtag 20
<210>2477
<211>20
<212>DNA
<400>2477
cgctagtctt agaagcgcaa 20
<210>2478
<211>20
<212>DNA
<400>2478
gctgtcttca tcgtaaagac 20
<210>2479
<211>20
<212>DNA
<400>2479
cctaatacgt ggggattatg 20
<210>2480
<211>20
<212>DNA
<400>2480
tctggagaag gattcctacc 20
<210>2481
<211>20
<212>DNA
<400>2481
cggttcacga atgaattggc 20
<210>2482
<211>20
<212>DNA
<400>2482
acctcccgcc atctctttat 20
<210>2483
<211>20
<212>DNA
<400>2483
gctgtcttca tcgtaaagac 20
<210>2484

<211>20
<212>DNA
<400>2484
gcctgtagcg tggattacaa 20
<210>2485
<211>20
<212>DNA
<400>2485
gtttcgcaag gagaatccag 20
<210>2486
<211>20
<212>DNA
<400>2486
gctgtgagtt aggctatacg 20
<210>2487
<211>20
<212>DNA
<400>2487
ctaggtctac aggatcctgt 20
<210>2488
<211>20
<212>DNA
<400>2488
gcgccgtcat tgcgaacaat 20
<210>2489
<211>20
<212>DNA
<400>2489
gcgattgtca ccttaggaac 20
<210>2490
<211>20
<212>DNA
<400>2490
ctgacgacat agtactacaa 20
<210>2491
<211>20
<212>DNA
<400>2491
gggaaaggat tgtaccgaga 20
<210>2492
<211>20
<212>DNA
<400>2492
gatcgagatg aaagactcgg 20
<210>2493
<211>20
<212>DNA
<400>2493
ttacctcttc tggattcggg 20
<210>2494
<211>20
<212>DNA
<400>2494
cgagatggct agatccaaag 20
<210>2495
<211>20
<212>DNA
<400>2495
ctcttgacga tcaatcactg 20
<210>2496
<211>20
<212>DNA
<400>2496
gagctttagg taccctaggc 20

<210>2497
<211>20
<212>DNA
<400>2497
cccttgctcgt aaaactctccc 20
<210>2498
<211>20
<212>DNA
<400>2498
gccctcggat tcaacatgat 20
<210>2499
<211>20
<212>DNA
<400>2499
gtatctcaag agcttgcgga 20
<210>2500
<211>20
<212>DNA
<400>2500
gtcccatggc caaagataac 20
<210>2501
<211>20
<212>DNA
<400>2501
cccacctgaa aatgaggaac 20
<210>2502
<211>20
<212>DNA
<400>2502
cagtaacgaag cctccttcaa 20
<210>2503
<211>20
<212>DNA
<400>2503
ctcctgcgta tctgttatgg 20
<210>2504
<211>20
<212>DNA
<400>2504
cgcacttaca aaatcggcga 20
<210>2505
<211>20
<212>DNA
<400>2505
ggtggagacg actttgatga 20
<210>2506
<211>20
<212>DNA
<400>2506
tccgtagcgt cattcgaagc 20
<210>2507
<211>20
<212>DNA
<400>2507
catcgtagtt ctccaaggag 20
<210>2508
<211>20
<212>DNA
<400>2508
ggttcattgc agcagcagaa 20
<210>2509
<211>20
<212>DNA
<400>2509

ggcttttgaat ttgagactgc 20
<210>2510
<211>20
<212>DNA
<400>2510
gtcccatgga gatttctcct 20
<210>2511
<211>20
<212>DNA
<400>2511
gagacttcga cgatgccatc 20
<210>2512
<211>20
<212>DNA
<400>2512
cacagggttta cctaagaccc 20
<210>2513
<211>20
<212>DNA
<400>2513
gctcttccag aatctatccc 20
<210>2514
<211>20
<212>DNA
<400>2514
gatcccgctt atcctcatgt 20
<210>2515
<211>20
<212>DNA
<400>2515
ccacgcctac aactacagaa 20
<210>2516
<211>20
<212>DNA
<400>2516
gcacagaacg aaatgtcgga 20
<210>2517
<211>20
<212>DNA
<400>2517
cgcagagcga aaagtcctaa 20
<210>2518
<211>20
<212>DNA
<400>2518
gagtcctact gcaaagctac 20
<210>2519
<211>20
<212>DNA
<400>2519
ggttcttacg ctcttagagc 20
<210>2520
<211>20
<212>DNA
<400>2520
gtttactctc ccctacgaac 20
<210>2521
<211>20
<212>DNA
<400>2521
ccctaaacca acgcttcttc 20
<210>2522
<211>20
<212>DNA

<400>2522
ccctaagtgc agtgacccta 20
<210>2523
<211>20
<212>DNA
<400>2523
gtcctgacta cagtcccaaa 20
<210>2524
<211>20
<212>DNA
<400>2524
atcaggccag ggtcatgcca 20
<210>2525
<211>20
<212>DNA
<400>2525
gagaacctca tctcgaggga 20
<210>2526
<211>20
<212>DNA
<400>2526
cggggtggta tgatcttaca 20
<210>2527
<211>20
<212>DNA
<400>2527
cagggtcact caggcagaca 20
<210>2528
<211>20
<212>DNA
<400>2528
ccgacgccta tagctatctc 20
<210>2529
<211>20
<212>DNA
<400>2529
gagtagatc ctcagatcca 20
<210>2530
<211>20
<212>DNA
<400>2530
gcggggcccag cctcctcata 20
<210>2531
<211>20
<212>DNA
<400>2531
cgaagcgta tattgccgca 20
<210>2532
<211>20
<212>DNA
<400>2532
cgcagctcag tagtgatgac 20
<210>2533
<211>20
<212>DNA
<400>2533
ggcttagact cgaattccga 20
<210>2534
<211>20
<212>DNA
<400>2534
gtcggcatt ctcttcta 20
<210>2535
<211>20

<212>DNA
<400>2535
agtagggaag tcacagagcc 20
<210>2536
<211>20
<212>DNA
<400>2536
gctaagtgag caatcgacaca 20
<210>2537
<211>20
<212>DNA
<400>2537
gaactagacg tgtgctcaac 20
<210>2538
<211>20
<212>DNA
<400>2538
cctgctgcca cagatcccc 20
<210>2539
<211>20
<212>DNA
<400>2539
cagcctgagg gacttttgta 20
<210>2540
<211>20
<212>DNA
<400>2540
caacgaaacc accgcaacca 20
<210>2541
<211>20
<212>DNA
<400>2541
gtcgcctcta catagacatc 20
<210>2542
<211>20
<212>DNA
<400>2542
caactgtaag agctttcgcc 20
<210>2543
<211>20
<212>DNA
<400>2543
caccatcatg tggttgtctg 20
<210>2544
<211>20
<212>DNA
<400>2544
taccaccata gctattgggc 20
<210>2545
<211>20
<212>DNA
<400>2545
gccatatcta cccacaagac 20
<210>2546
<211>20
<212>DNA
<400>2546
ggaagtgttc ttacaggaac 20
<210>2547
<211>20
<212>DNA
<400>2547
gcaagacctg tgatcagaga 20
<210>2548

<211>20
<212>DNA
<400>2548
gtaggagcca ttaaggtgac 20
<210>2549
<211>20
<212>DNA
<400>2549
ccctaagttc aaggtagcga 20
<210>2550
<211>20
<212>DNA
<400>2550
gcgtgaggaa cctcatctga 20
<210>2551
<211>20
<212>DNA
<400>2551
gcaacagaaa acactccgct 20
<210>2552
<211>20
<212>DNA
<400>2552
ggagaaaaga acagagcacg 20
<210>2553
<211>20
<212>DNA
<400>2553
cgccttatgc gcgtaaagaa 20
<210>2554
<211>20
<212>DNA
<400>2554
gaagcaacct cgtctccctc 20
<210>2555
<211>20
<212>DNA
<400>2555
ggaagaacag ctacaggact 20
<210>2556
<211>20
<212>DNA
<400>2556
ggccgacact tttaatgcca 20
<210>2557
<211>20
<212>DNA
<400>2557
gccaaggcct ttgcaatact 20
<210>2558
<211>20
<212>DNA
<400>2558
gagtgtggaa ggaaaccggt 20
<210>2559
<211>20
<212>DNA
<400>2559
ctcagcggac actcccaaact 20
<210>2560
<211>20
<212>DNA
<400>2560
gccaaagtcg agtctaagca 20

<210>2561
<211>20
<212>DNA
<400>2561
ctaaggtaac cccgacaaac 20
<210>2562
<211>20
<212>DNA
<400>2562
gcacatcaga aaatgcgacc 20
<210>2563
<211>20
<212>DNA
<400>2563
gactggcttt tatagccacg 20
<210>2564
<211>20
<212>DNA
<400>2564
cccaccccat ttaacaacag 20
<210>2565
<211>20
<212>DNA
<400>2565
gcgcaccaca ttaggattgt 20
<210>2566
<211>20
<212>DNA
<400>2566
ggtcaagacc aagttcatgc 20
<210>2567
<211>20
<212>DNA
<400>2567
agaaggcaag gctcccacac 20
<210>2568
<211>20
<212>DNA
<400>2568
cgacaccttt gatcggacta 20
<210>2569
<211>20
<212>DNA
<400>2569
atgggtcaca cgagctccac 20
<210>2570
<211>20
<212>DNA
<400>2570
ctataggaaa cgtcggggat 20
<210>2571
<211>20
<212>DNA
<400>2571
ctcaggaatc aatcccacag 20
<210>2572
<211>20
<212>DNA
<400>2572
gagccctact cctttgcttt 20
<210>2573
<211>20
<212>DNA
<400>2573

ggagaagaaa ttcctctcgc 20
<210>2574
<211>20
<212>DNA
<400>2574
gcgaagttgc tagctaagaa 20
<210>2575
<211>20
<212>DNA
<400>2575
tattttttgc ctccgcaggc 20
<210>2576
<211>20
<212>DNA
<400>2576
ccttcgctga caaccaagaa 20
<210>2577
<211>20
<212>DNA
<400>2577
ctacttcctg gttgggaaga 20
<210>2578
<211>20
<212>DNA
<400>2578
cctctaggga aagaagctct 20
<210>2579
<211>20
<212>DNA
<400>2579
tctattcaca gtggggcgat 20
<210>2580
<211>20
<212>DNA
<400>2580
ttgctgtagg tggcatcact 20
<210>2581
<211>20
<212>DNA
<400>2581
caagtcagca cctcgtacat 20
<210>2582
<211>20
<212>DNA
<400>2582
cgaacccacg gtacgcgtta 20
<210>2583
<211>20
<212>DNA
<400>2583
ggaaaccaca gccactacaa 20
<210>2584
<211>20
<212>DNA
<400>2584
ggcagatcgt ttccacatgc 20
<210>2585
<211>20
<212>DNA
<400>2585
ggcttcggct ataggatctt 20
<210>2586
<211>20
<212>DNA

<400>2586
ccgacgacaa acattgatcc 20
<210>2587
<211>20
<212>DNA
<400>2587
gcattagctt ggcgtagagat 20
<210>2588
<211>20
<212>DNA
<400>2588
ccgtgattca tttccccttc 20
<210>2589
<211>20
<212>DNA
<400>2589
gagggatccg gtttgtattc 20
<210>2590
<211>20
<212>DNA
<400>2590
gaggtacacg gctttaaacc 20
<210>2591
<211>20
<212>DNA
<400>2591
caaggagtta cgacaaggag 20
<210>2592
<211>20
<212>DNA
<400>2592
ttgccaccat tgcctccgta 20
<210>2593
<211>20
<212>DNA
<400>2593
ccgacgacaa acattgatcc 20
<210>2594
<211>20
<212>DNA
<400>2594
gttgctcagg aacaacagag 20
<210>2595
<211>20
<212>DNA
<400>2595
ttaggagcct ccgtagctgg 20
<210>2596
<211>20
<212>DNA
<400>2596
tggccagagc cgggatcgaa 20
<210>2597
<211>20
<212>DNA
<400>2597
ggaatttgca tgcctactg 20
<210>2598
<211>20
<212>DNA
<400>2598
gggatttatc ttgaggaggc 20
<210>2599
<211>20

<212>DNA
<400>2599
gttctaactc tacctgacgg 20
<210>2600
<211>20
<212>DNA
<400>2600
gagcaaaactc cgaagcggtt 20
<210>2601
<211>20
<212>DNA
<400>2601
gcccccttggtc ctttcttatg 20
<210>2602
<211>20
<212>DNA
<400>2602
gaacgtgttc ggagacctct 20
<210>2603
<211>20
<212>DNA
<400>2603
cgaagcaact tcccctagta 20
<210>2604
<211>20
<212>DNA
<400>2604
caagacgttt gtgagtacga 20
<210>2605
<211>20
<212>DNA
<400>2605
ccatctgagc tatctagcca 20
<210>2606
<211>20
<212>DNA
<400>2606
cagcaaaata gtctgctccc 20
<210>2607
<211>20
<212>DNA
<400>2607
cctgcaggaa gtgctaacat 20
<210>2608
<211>20
<212>DNA
<400>2608
gttgcagcag aggtaatcgt 20
<210>2609
<211>20
<212>DNA
<400>2609
ccctgatcga atcctttcag 20
<210>2610
<211>20
<212>DNA
<400>2610
cgacgggaac gaacttctaa 20
<210>2611
<211>20
<212>DNA
<400>2611
cccagggttcg ttaggttcta 20
<210>2612

```

<211>20
<212>DNA
<400>2612
gggaacgtat cctgcttgaa 20
<210>2613
<211>20
<212>DNA
<400>2613
ggcaaccact tgacaatcac 20
<210>2614
<211>20
<212>DNA
<400>2614
ggcaacaaag tcctcattcg 20
<210>2615
<211>20
<212>DNA
<400>2615
gccgatgttt ctaattgcac 20
<210>2616
<211>20
<212>DNA
<400>2616
ccccttttca ggagcgtatt 20
<210>2617
<211>20
<212>DNA
<400>2617
gtgccgcctt gacatatata 20
<210>2618
<211>20
<212>DNA
<400>2618
gtgagcaaag gctttctgag 20
<210>2619
<211>20
<212>DNA
<400>2619
caacctcgca aagcttcttt 20
<210>2620
<211>20
<212>DNA
<400>2620
cgttctccta gtgtagttcc 20
<210>2621
<211>20
<212>DNA
<400>2621
ggcatgtgtg gaattggtgt 20
<210>2622
<211>20
<212>DNA
<400>2622
gccatactcg ttagcgcaag 20
<210>2623
<211>20
<212>DNA
<400>2623
gacataccgt tctcctagtgt 20
<210>2624
<211>20
<212>DNA
<400>2624
ccctcgtcaa taaagcgcac 20

```

<210>2625
<211>20
<212>DNA
<400>2625
cttcttttgag ggcagaactc 20
<210>2626
<211>20
<212>DNA
<400>2626
cttcataccc tgaaaacggc 20
<210>2627
<211>20
<212>DNA
<400>2627
cgaggggggaa atgaaattat 20
<210>2628
<211>20
<212>DNA
<400>2628
cgccagggac gtttttctaa 20
<210>2629
<211>20
<212>DNA
<400>2629
cataacctga gtcgcggtaa 20
<210>2630
<211>20
<212>DNA
<400>2630
gtgacgaccc tcattctagaa 20
<210>2631
<211>20
<212>DNA
<400>2631
gcttgagtga tcgaaaccca 20
<210>2632
<211>20
<212>DNA
<400>2632
ggctcgacag atggctgtat 20
<210>2633
<211>20
<212>DNA
<400>2633
gcgtgttggt cccttgcaat 20
<210>2634
<211>20
<212>DNA
<400>2634
aggcacagcc ctctttccct 20
<210>2635
<211>20
<212>DNA
<400>2635
cgcatTTgag caacatcgct 20
<210>2636
<211>20
<212>DNA
<400>2636
caaagccaaa gcaaacacgc 20
<210>2637
<211>20
<212>DNA
<400>2637

WO 99/27105

PCT/IB98/01890

gatacgtagaa gatcctggca 20
 <210>2638
 <211>20
 <212>DNA
 <400>2638
 cgtcatgagt aagccgagta 20
 <210>2639
 <211>20
 <212>DNA
 <400>2639
 cacatggagt cttgcagact 20
 <210>2640
 <211>20
 <212>DNA
 <400>2640
 ctgacgacct ttcagaatct 20
 <210>2641
 <211>20
 <212>DNA
 <400>2641
 agtgcatacag gaactccaag 20
 <210>2642
 <211>20
 <212>DNA
 <400>2642
 tgcgagttac ttcccgatgc 20
 <210>2643
 <211>20
 <212>DNA
 <400>2643
 ctgaaatgga tatgcgagga 20
 <210>2644
 <211>20
 <212>DNA
 <400>2644
 ctcagcttgg caactgtgta 20
 <210>2645
 <211>20
 <212>DNA
 <400>2645
 cacacacacg tcaggtcatt 20
 <210>2646
 <211>20
 <212>DNA
 <400>2646
 ggtattggtg tgatggctgc 20
 <210>2647
 <211>20
 <212>DNA
 <400>2647
 ccggtgcata cgggtgattta 20
 <210>2648
 <211>20
 <212>DNA
 <400>2648
 ggctaaagac tttggagagg 20
 <210>2649
 <211>20
 <212>DNA
 <400>2649
 gttccgatca tccctgtcta 20
 <210>2650
 <211>20
 <212>DNA

<400>2650
ggagattcaa gaacctgctg 20
<210>2651
<211>20
<212>DNA
<400>2651
cacatgtgtg tccatgagtg 20
<210>2652
<211>20
<212>DNA
<400>2652
cgttcccctt tggcatcaaa 20
<210>2653
<211>20
<212>DNA
<400>2653
acgtaaagct ccgagagctt 20
<210>2654
<211>20
<212>DNA
<400>2654
ggagaaacaa gcagagctga 20
<210>2655
<211>20
<212>DNA
<400>2655
gagcttgctt acccaatttg 20
<210>2656
<211>20
<212>DNA
<400>2656
cgatacagat ccatccggtc 20
<210>2657
<211>20
<212>DNA
<400>2657
caagcagctt agttgcagca 20
<210>2658
<211>20
<212>DNA
<400>2658
cagggactgg aacacagaat 20
<210>2659
<211>20
<212>DNA
<400>2659
gcactctttt tctaccctcc 20
<210>2660
<211>20
<212>DNA
<400>2660
cccatgacca tacagctcat 20
<210>2661
<211>20
<212>DNA
<400>2661
accctctgca tggcgtcgtg 20
<210>2662
<211>20
<212>DNA
<400>2662
gtaaaacgcag tgcaccttga 20
<210>2663
<211>20

<212>DNA
 <400>2663
 cgacaacatc tgaatacggc 20
 <210>2664
 <211>20
 <212>DNA
 <400>2664
 ctccagcaac attcccattg 20
 <210>2665
 <211>20
 <212>DNA
 <400>2665
 ggcatgttgc tacaatctcc 20
 <210>2666
 <211>20
 <212>DNA
 <400>2666
 gagatcccca agcaatttcc 20
 <210>2667
 <211>20
 <212>DNA
 <400>2667
 ctactagacg caagggaga 20
 <210>2668
 <211>20
 <212>DNA
 <400>2668
 caaggacttc ctagagcttc 20
 <210>2669
 <211>20
 <212>DNA
 <400>2669
 gtaaacgcag tgcaccttga 20
 <210>2670
 <211>20
 <212>DNA
 <400>2670
 gttcgtgtt gacttaggct 20
 <210>2671
 <211>20
 <212>DNA
 <400>2671
 ctccagcaac attcccattg 20
 <210>2672
 <211>20
 <212>DNA
 <400>2672
 ctgcaacaat accctggaga 20
 <210>2673
 <211>20
 <212>DNA
 <400>2673
 caagagttct tgtctgcctc 20
 <210>2674
 <211>20
 <212>DNA
 <400>2674
 gcactctgga ccgagacaat 20
 <210>2675
 <211>20
 <212>DNA
 <400>2675
 cacctttact aggagtcacc 20
 <210>2676

WO 99/27105

PCT/IB98/01890

<211>20
 <212>DNA
 <400>2676
 ggcattctctt ggagagtttag 20
 <210>2677
 <211>20
 <212>DNA
 <400>2677
 ggccgaagtt tgctcgaaaa 20
 <210>2678
 <211>20
 <212>DNA
 <400>2678
 cgaacgatct ataccctgga 20
 <210>2679
 <211>20
 <212>DNA
 <400>2679
 ccataagaga gttcctgaga 20
 <210>2680
 <211>20
 <212>DNA
 <400>2680
 ctccggctcgc atacagaaat 20
 <210>2681
 <211>20
 <212>DNA
 <400>2681
 ccctctattt gcaaacgcga 20
 <210>2682
 <211>20
 <212>DNA
 <400>2682
 gaagggcctt ttccttgcta 20
 <210>2683
 <211>20
 <212>DNA
 <400>2683
 cgaacgatct ataccctgga 20
 <210>2684
 <211>20
 <212>DNA
 <400>2684
 ggacaagctc ttcactccat 20
 <210>2685
 <211>20
 <212>DNA
 <400>2685
 ccgaaggggt tctctatgat 20
 <210>2686
 <211>20
 <212>DNA
 <400>2686
 acgagttcgc ggatcttctt 20
 <210>2687
 <211>20
 <212>DNA
 <400>2687
 ccgatcaccg gcataattct 20
 <210>2688
 <211>20
 <212>DNA
 <400>2688
 ccagtaagtc tcagatcctc 20

<210>1409
<211>20
<212>DNA
<400>1409
cgtactaggg attgagcata 20
<210>1410
<211>20
<212>DNA
<400>1410
gagtgtctga cgtttctgag 20
<210>1411
<211>20
<212>DNA
<400>1411
ggaccgccat taçgagaaat 20
<210>1412
<211>20
<212>DNA
<400>1412
gagttgaact cctgccttga 20
<210>1413
<211>20
<212>DNA
<400>1413
atcagatcga agagctccag 20
<210>1414
<211>20
<212>DNA
<400>1414
ggtcctaagca cgtaggttgt 20
<210>1415
<211>20
<212>DNA
<400>1415
gggatggcct taggtaaagt 20
<210>1416
<211>20
<212>DNA
<400>1416
ctgagagctg aacttgcttg 20
<210>1417
<211>20
<212>DNA
<400>1417
ctttggaaca tcgcaaagcg 20
<210>1418
<211>20
<212>DNA
<400>1418
cttggtaggg ttgtagagtc 20
<210>1419
<211>20
<212>DNA
<400>1419
gagttgaact cctgccttga 20
<210>1420
<211>20
<212>DNA
<400>1420
ggcatgttta tagtgtggcg 20
<210>1421
<211>20
<212>DNA
<400>1421


```

atgtgacagg tgctacccca    20
<210>1422
<211>20
<212>DNA
<400>1422
gagaatcaga ggcaagtcca    20
<210>1423
<211>20
<212>DNA
<400>1423
gaaggcttcc ttagtgagca    20
<210>1424
<211>20
<212>DNA
<400>1424
cagcgagttg cagcatttga    20
<210>1425
<211>20
<212>DNA
<400>1425
tcgcatgttt aggaccgctg    20
<210>1426
<211>20
<212>DNA
<400>1426
ttcctgaggc cccagaagag    20
<210>1427
<211>20
<212>DNA
<400>1427
gcatgttttag gaccgctgaa    20
<210>1428
<211>20
<212>DNA
<400>1428
ccatactctc tgatgcagcg    20
<210>1429
<211>20
<212>DNA
<400>1429
ggctcttaga gaaaccgagt    20
<210>1430
<211>20
<212>DNA
<400>1430
ctcggcaacg agttcaagaa    20
<210>1431
<211>20
<212>DNA
<400>1431
ggatatccag cacgtgctct    20
<210>1432
<211>20
<212>DNA
<400>1432
gttgtggctc aagaaggaca    20
<210>1433
<211>20
<212>DNA
<400>1433
gcgtgtgaaa gaagctgaag    20
<210>1434
<211>20
<212>DNA

```

```

<400>2714
gtgatcttag ggcgagtgtt 20
<210>2715
<211>20
<212>DNA
<400>2715
gcattcttgc gactctttgc 20
<210>2716
<211>20
<212>DNA
<400>2716
gggataagga gcaaagactc 20
<210>2717
<211>20
<212>DNA
<400>2717
gccacccttc gatctgttta 20
<210>2718
<211>20
<212>DNA
<400>2718
caagaggggt tcgcagtaaa 20
<210>2719
<211>20
<212>DNA
<400>2719
cgctcttctt ttccttcttc 20
<210>2720
<211>20
<212>DNA
<400>2720
cgcaagacag aatgctggaa 20
<210>2721
<211>20
<212>DNA
<400>2721
ccgtatgcca atctgtcttg 20
<210>2722
<211>20
<212>DNA
<400>2722
ccactgcgca actatgtcaa 20
<210>2723
<211>20
<212>DNA
<400>2723
cgtcggcatg tattcttagga 20
<210>2724
<211>20
<212>DNA
<400>2724
gtcccacagc cagtaaacad 20
<210>2725
<211>20
<212>DNA
<400>2725
ggctccacaa acaaagagga 20
<210>2726
<211>20
<212>DNA
<400>2726
caggaagtgt ttctocgagt 20
<210>2727
<211>20

```

WO 99/27105

PCT/IB98/01890

<212>DNA
 <400>2727
 cctattctgt tacgggaagc 20
 <210>2728
 <211>20
 <212>DNA
 <400>2728
 gatggtatcc tatccagggg 20
 <210>2729
 <211>20
 <212>DNA
 <400>2729
 ggaacatggt ggtagaggct 20
 <210>2730
 <211>20
 <212>DNA
 <400>2730
 ggcgatcttc agaagaaagc 20
 <210>2731
 <211>20
 <212>DNA
 <400>2731
 ggatgtttcc cgaaacaatc 20
 <210>2732
 <211>20
 <212>DNA
 <400>2732
 ccttttgccc tcccctccac 20
 <210>2733
 <211>20
 <212>DNA
 <400>2733
 tggggggtag tgtgtcatca 20
 <210>2734
 <211>20
 <212>DNA
 <400>2734
 tctggagaac ttctggagag 20
 <210>2735
 <211>20
 <212>DNA
 <400>2735
 gtcaggaaatg tgcgtgcctt 20
 <210>2736
 <211>20
 <212>DNA
 <400>2736
 gtgggaactt atagtgaggo 20
 <210>2737
 <211>20
 <212>DNA
 <400>2737
 ctccgagata catgactcgt 20
 <210>2738
 <211>20
 <212>DNA
 <400>2738
 ctcaaagacg acctgagact 20
 <210>2739
 <211>20
 <212>DNA
 <400>2739
 cctggagtaa ataacccttc 20
 <210>2740

<211>20
<212>DNA
<400>2740
gaatggcttc cagaccttgt 20
<210>2741
<211>20
<212>DNA
<400>2741
ctttataaaag cagtcccggtg 20
<210>2742
<211>20
<212>DNA
<400>2742
cgccctgacgg ctttgtttat 20
<210>2743
<211>20
<212>DNA
<400>2743
gcctgttggtc catacacgat 20
<210>2744
<211>20
<212>DNA
<400>2744
gaggaagcta tgagtgcgaa 20
<210>2745
<211>20
<212>DNA
<400>2745
ccctgtgtca aagctaaacc 20
<210>2746
<211>20
<212>DNA
<400>2746
ccttcccaac tttatggcgt 20
<210>2747
<211>20
<212>DNA
<400>2747
caggcaagct aacgaaggta 20
<210>2748
<211>20
<212>DNA
<400>2748
ctctctctct cattcgaaag 20
<210>2749
<211>20
<212>DNA
<400>2749
tagtccccag aacaacatcg 20
<210>2750
<211>20
<212>DNA
<400>2750
cgtctgcatc ctattgaacc 20
<210>2751
<211>20
<212>DNA
<400>2751
tcgaaccctc ggtacccttt 20
<210>2752
<211>20
<212>DNA
<400>2752
ggttctcaat gcctccttag 20

<210>2753
<211>20
<212>DNA
<400>2753
cgcaatgcga atcagagtca 20
<210>2754
<211>20
<212>DNA
<400>2754
ctactacctg ccaattcctc 20
<210>2755
<211>20
<212>DNA
<400>2755
ggtgtgattt ctggagtcac 20
<210>2756
<211>20
<212>DNA
<400>2756
ggacgctctc tatgcacaaa 20
<210>2757
<211>20
<212>DNA
<400>2757
gggctgcata cccaagagat 20
<210>2758
<211>20
<212>DNA
<400>2758
aaacactctc gctcttctcg 20
<210>2759
<211>20
<212>DNA
<400>2759
gcactatctc gtcctgaagt 20
<210>2760
<211>20
<212>DNA
<400>2760
tagcgctgtt ccaactgcaat 20
<210>2761
<211>20
<212>DNA
<400>2761
gtccactact tcctaatacc 20
<210>2762
<211>20
<212>DNA
<400>2762
tccctagtgt ctaccattcc 20
<210>2763
<211>20
<212>DNA
<400>2763
gccccaacgtt ctgtaatagc 20
<210>2764
<211>20
<212>DNA
<400>2764
aacctcatag tctccggcag 20
<210>2765
<211>20
<212>DNA
<400>2765

ggcatagcca tacctttctc 20
<210>2766
<211>20
<212>DNA
<400>2766
cgtccatgtg tagagtcgaa 20
<210>2767
<211>20
<212>DNA
<400>2767
gacagtctgt tcagagaagc 20
<210>2768
<211>20
<212>DNA
<400>2768
accataagcc gtccaatagc 20
<210>2769
<211>20
<212>DNA
<400>2769
ccgcagaagt aactactgga 20
<210>2770
<211>20
<212>DNA
<400>2770
cttcaaagtc cccttcttgc 20
<210>2771
<211>20
<212>DNA
<400>2771
gtcttcgata ggaacccgaa 20
<210>2772
<211>20
<212>DNA
<400>2772
gcctgtcata gcaaacgaga 20
<210>2773
<211>20
<212>DNA
<400>2773
gcagtagcag catgaactgt 20
<210>2774
<211>20
<212>DNA
<400>2774
ggcagcaaag gctgaagatt 20
<210>2775
<211>20
<212>DNA
<400>2775
cgaggacttc tactgaagag 20
<210>2776
<211>20
<212>DNA
<400>2776
gagttcagtc gtcctacttc 20
<210>2777
<211>20
<212>DNA
<400>2777
tgtcggcgta gttctttagc 20
<210>2778
<211>20
<212>DNA

<400>2778
gcaaaagcgc ctccagaaaa 20
<210>2779
<211>20
<212>DNA
<400>2779
gctccagtac ccttcaaaca 20
<210>2780
<211>20
<212>DNA
<400>2780
cggctaaacg tcctgtagta 20
<210>2781
<211>20
<212>DNA
<400>2781
ctcgataaga atggatggcg 20
<210>2782
<211>20
<212>DNA
<400>2782
caactcgatc aagttgaagg 20
<210>2783
<211>20
<212>DNA
<400>2783
ggatttttct cactccctcg 20
<210>2784
<211>20
<212>DNA
<400>2784
ctcgcaaagc tcttcgtctt 20
<210>2785
<211>20
<212>DNA
<400>2785
ggatagaatt ccaagggcga 20
<210>2786
<211>20
<212>DNA
<400>2786
gcatacagct aggtctatcg 20
<210>2787
<211>20
<212>DNA
<400>2787
gcaaaagcgc ctccagaaaa 20
<210>2788
<211>20
<212>DNA
<400>2788
gatacccggt tcagttggtg 20
<210>2789
<211>20
<212>DNA
<400>2789
cggctaaacg tcctgtagta 20
<210>2790
<211>20
<212>DNA
<400>2790
ccggcaatag aatttcgagc 20
<210>2791
<211>20

<212>DNA
<400>2791
gcatctgtga gttcattggc 20
<210>2792
<211>20
<212>DNA
<400>2792
cgaacgttta caccttegac 20
<210>2793
<211>20
<212>DNA
<400>2793
ggctttttag gggaaccttt 20
<210>2794
<211>20
<212>DNA
<400>2794
cgtgtgcgca cgatcacagc 20
<210>2795
<211>20
<212>DNA
<400>2795
ccaactgctt atcaagccct 20
<210>2796
<211>20
<212>DNA
<400>2796
cactagccat ggactttacc 20
<210>2797
<211>20
<212>DNA
<400>2797
cataactccc tgagaagtgg 20
<210>2798
<211>20
<212>DNA
<400>2798
catagaggtt tctgcaggct 20
<210>2799
<211>20
<212>DNA
<400>2799
atattcaatc cctgggtgcg 20
<210>2800
<211>20
<212>DNA
<400>2800
cggtttggat ggtcacttca 20
<210>2801
<211>20
<212>DNA
<400>2801
cgaacgttta caccttegac 20
<210>2802
<211>20
<212>DNA
<400>2802
ctcgaacttc ggtaacgett 20
<210>2803
<211>20
<212>DNA
<400>2803
cagctttgat aacgtctccc 20
<210>2804

<211>20
<212>DNA
<400>2804
cctttcttca caggatggct 20
<210>2805
<211>20
<212>DNA
<400>2805
cttttagttc agtgtgagcg 20
<210>2806
<211>20
<212>DNA
<400>2806
gccacgatga cggcaggata 20
<210>2807
<211>20
<212>DNA
<400>2807
gaagaggagt tctctccaag 20
<210>2808
<211>20
<212>DNA
<400>2808
ggcgggttga ggttttacat 20
<210>2809
<211>20
<212>DNA
<400>2809
cagatcaact tcagcgctt 20
<210>2810
<211>20
<212>DNA
<400>2810
cggaattac ccgtacctt 20
<210>2811
<211>20
<212>DNA
<400>2811
cccaccatag tttctgaaac 20
<210>2812
<211>20
<212>DNA
<400>2812
gagaccgcat aaacttatcc 20
<210>2813
<211>20
<212>DNA
<400>2813
ctcttccacc agaactcttc 20
<210>2814
<211>20
<212>DNA
<400>2814
gctttcctct tggaggaaca 20
<210>2815
<211>20
<212>DNA
<400>2815
gcgcaactca ccacggttg 20
<210>2816
<211>20
<212>DNA
<400>2816
gttgccccta caaactttgc 20

<210>2817
<211>20
<212>DNA
<400>2817
ctgctacttc aacttcgcct 20
<210>2818
<211>20
<212>DNA
<400>2818
gtcccatagg caaccacaat 20
<210>2819
<211>20
<212>DNA
<400>2819
cagaggggga agatttttac 20
<210>2820
<211>20
<212>DNA
<400>2820
gcgaactctc gaatttcgca 20
<210>2821
<211>20
<212>DNA
<400>2821
cagaaaccgc cttacttagc 20
<210>2822
<211>20
<212>DNA
<400>2822
gcttgggccca aagcttctaa 20
<210>2823
<211>20
<212>DNA
<400>2823
acagtcccgg gggctccata 20
<210>2824
<211>20
<212>DNA
<400>2824
cgtactgggt catcgga aaa 20
<210>2825
<211>20
<212>DNA
<400>2825
gcatccatac ggatgacagt 20
<210>2826
<211>20
<212>DNA
<400>2826
cgattacagc actacccta 20
<210>2827
<211>20
<212>DNA
<400>2827
cgcttacttg ggctttgaca 20
<210>2828
<211>20
<212>DNA
<400>2828
gatccgagag catccaagaa 20
<210>2829
<211>20
<212>DNA
<400>2829

catcagaggg aaaagctgct 20
<210>2830
<211>20
<212>DNA
<400>2830
ggctaaacga tcgagcaaac 20
<210>2831
<211>20
<212>DNA
<400>2831
gggtaatctc cacaataccc 20
<210>2832
<211>20
<212>DNA
<400>2832
cgaacagcgg caatttcaat 20
<210>2833
<211>20
<212>DNA
<400>2833
gaagagtgg cacccataac 20
<210>2834
<211>20
<212>DNA
<400>2834
ggcacaaccg cttaggttca 20
<210>2835
<211>20
<212>DNA
<400>2835
gtccttagag gtaatgaggg 20
<210>2836
<211>20
<212>DNA
<400>2836
cagagccgag aattatgttg 20
<210>2837
<211>20
<212>DNA
<400>2837
cgatgattcc catcataggg 20
<210>2838
<211>20
<212>DNA
<400>2838
cggatgctca ctctatctt 20
<210>2839
<211>20
<212>DNA
<400>2839
cgaaagtaaa gcgaacagcg 20
<210>2840
<211>20
<212>DNA
<400>2840
gcctgaagat ggcaaggaaa 20
<210>2841
<211>20
<212>DNA
<400>2841
aggacatcgt cttcttctgc 20
<210>2842
<211>20
<212>DNA

<400>2842
cttgcgtaat tggcgtgcta 20
<210>2843
<211>20
<212>DNA
<400>2843
acaggacgaa ggcttagagc 20
<210>2844
<211>20
<212>DNA
<400>2844
agacgtggac atactttccc 20
<210>2845
<211>20
<212>DNA
<400>2845
ccaacttctg tacttcagcc 20
<210>2846
<211>20
<212>DNA
<400>2846
gcatggcct cccaaagtta 20
<210>2847
<211>20
<212>DNA
<400>2847
cccatcctgc caattgaaca 20
<210>2848
<211>20
<212>DNA
<400>2848
gcgagctatc cactagagaa 20
<210>2849
<211>20
<212>DNA
<400>2849
ggccccgtgt tcaagaaaag 20
<210>2850
<211>20
<212>DNA
<400>2850
cagcagcaga actctctcat 20
<210>2851
<211>20
<212>DNA
<400>2851
cctgcctaag cctaagtcac 20
<210>2852
<211>20
<212>DNA
<400>2852
cctggctcac ggacattagt 20
<210>2853
<211>20
<212>DNA
<400>2853
tacaggggtt catgctgctg 20
<210>2854
<211>20
<212>DNA
<400>2854
tcagcagcaa gccgcataat 20
<210>2855
<211>20

<212>DNA
<400>2855
gagagagatc atcatgggtcc 20
<210>2856
<211>20
<212>DNA
<400>2856
cctagggaca tcttgcgtaa 20
<210>2857
<211>20
<212>DNA
<400>2857
gaagtgttgc gtccttcgtg 20
<210>2858
<211>20
<212>DNA
<400>2858
gcaagctaag aaagagcctc 20
<210>2859
<211>20
<212>DNA
<400>2859
gacgacgcgt atttcgtttg 20
<210>2860
<211>20
<212>DNA
<400>2860
ggagataaga ctcacaggca 20
<210>2861
<211>20
<212>DNA
<400>2861
caaaaggagg cactctcgaa 20
<210>2862
<211>20
<212>DNA
<400>2862
ctcccataga ggagacttag 20
<210>2863
<211>20
<212>DNA
<400>2863
gagaagcaac aaaagcagca 20
<210>2864
<211>20
<212>DNA
<400>2864
gtcagtgtta gcatcagtgc 20
<210>2865
<211>20
<212>DNA
<400>2865
gtcgattaga gggcttccca 20
<210>2866
<211>20
<212>DNA
<400>2866
gggataatcc ccatcactta 20
<210>2867
<211>20
<212>DNA
<400>2867
caggaacgag ccaaatagca 20
<210>2868

WO 99/27105

PCT/IB98/01890

```

<211>20
<212>DNA
<400>2868
cgatccttag accccaaaga 20
<210>2869
<211>20
<212>DNA
<400>2869
cgggtatttaa cgagccgcta 20
<210>2870
<211>20
<212>DNA
<400>2870
gtgggtactta gagcttttct 20
<210>2871
<211>20
<212>DNA
<400>2871
gttagggaaa tggcctgaga 20
<210>2872
<211>20
<212>DNA
<400>2872
ctgaggcgtg ctcttctgac 20
<210>2873
<211>20
<212>DNA
<400>2873
ctcctcggcc tgttcttctc 20
<210>2874
<211>20
<212>DNA
<400>2874
ccgcgagctt catattctac 20
<210>2875
<211>20
<212>DNA
<400>2875
gctgggtccc aataagagag 20
<210>2876
<211>20
<212>DNA
<400>2876
gaaggattga ttccattgac 20
<210>2877
<211>20
<212>DNA
<400>2877
gagagccttt tggagacttc 20
<210>2878
<211>20
<212>DNA
<400>2878
gaggagtcct ctggtgaaaa 20
<210>2879
<211>20
<212>DNA
<400>2879
ctgggtctaa tgtaggtcct 20
<210>2880
<211>20
<212>DNA
<400>2880
ggtcgccta aatgactcat 20

```

<210>2881
<211>20
<212>DNA
<400>2881
tgccggacgt tttgcattag 20
<210>2882
<211>20
<212>DNA
<400>2882
ggtcgcccta aatgactcat 20
<210>2883
<211>20
<212>DNA
<400>2883
tgcggttgccg gacgttttgc 20
<210>2884
<211>20
<212>DNA
<400>2884
gctcgagata tcggcatgaa 20
<210>2885
<211>20
<212>DNA
<400>2885
aggcatcgca ctgcgaatac 20
<210>2886
<211>20
<212>DNA
<400>2886
cccagaggca atcataggat 20
<210>2887
<211>20
<212>DNA
<400>2887
gctttcacat cgctaggcaa 20
<210>2888
<211>20
<212>DNA
<400>2888
ccccaaatga actttcaagc 20
<210>2889
<211>20
<212>DNA
<400>2889
gaggcacatg atgtcctaag 20
<210>2890
<211>20
<212>DNA
<400>2890
ctcatcccta taccagagat 20
<210>2891
<211>20
<212>DNA
<400>2891
ggggagagaa tccagctaat 20
<210>2892
<211>20
<212>DNA
<400>2892
cactgagtgt cccatggctg 20
<210>2893
<211>20
<212>DNA
<400>2893

gcattctctaa accccgtggt 20
<210>2894
<211>20
<212>DNA
<400>2894
gcttttcctgg atcgtcttag 20
<210>2895
<211>20
<212>DNA
<400>2895
gacgtgctcg tgccttatgc 20
<210>2896
<211>20
<212>DNA
<400>2896
gtcttcttttg ctgcgagaca 20
<210>2897
<211>20
<212>DNA
<400>2897
gtactagcaa cggtaaggga 20
<210>2898
<211>20
<212>DNA
<400>2898
cgcatgtata gcgatggaga 20
<210>2899
<211>20
<212>DNA
<400>2899
ggaaagccaa gcttccaact 20
<210>2900
<211>20
<212>DNA
<400>2900
gcagatcact acccctattc 20
<210>2901
<211>20
<212>DNA
<400>2901
ctcagtcaca atatctcctg 20
<210>2902
<211>20
<212>DNA
<400>2902
catcccaaag ctgaacgtct 20
<210>2903
<211>20
<212>DNA
<400>2903
gagcctacta cgcaggactc 20
<210>2904
<211>20
<212>DNA
<400>2904
tccgtgacgt tcctagagga 20
<210>2905
<211>20
<212>DNA
<400>2905
cccctaaagt aatcacaggg 20
<210>2906
<211>20
<212>DNA

<400>2906
ctgggataac gaaggttcgt 20
<210>2907
<211>20
<212>DNA
<400>2907
cctaagccta aaactccagc 20
<210>2908
<211>20
<212>DNA
<400>2908
cgctcttctg gcaacataga 20
<210>2909
<211>20
<212>DNA
<400>2909
gagtcggtgc agctgaatct 20
<210>2910
<211>20
<212>DNA
<400>2910
cttgaaagac gaacctaccc 20
<210>2911
<211>20
<212>DNA
<400>2911
tcttgattcg cacgacggcg 20
<210>2912
<211>20
<212>DNA
<400>2912
ggagactctt ccagtctcta 20
<210>2913
<211>20
<212>DNA
<400>2913
cgcatagccg ccattcctcca 20
<210>2914
<211>20
<212>DNA
<400>2914
cgtccctctt tcataaggaa 20
<210>2915
<211>20
<212>DNA
<400>2915
cccagcacat gattcggtga 20
<210>2916
<211>20
<212>DNA
<400>2916
caagggaaca aaggaggaag 20
<210>2917
<211>20
<212>DNA
<400>2917
ccagtcttaa gcacctctac 20
<210>2918
<211>20
<212>DNA
<400>2918
cttggttgaa atatgcggtc 20
<210>2919
<211>20

<212>DNA
<400>2919
ggattaagat atgccccctct 20
<210>2920
<211>20
<212>DNA
<400>2920
cccctacttc acatcacatc 20
<210>2921
<211>20
<212>DNA
<400>2921
cggtcggttc atgctatgga 20
<210>2922
<211>20
<212>DNA
<400>2922
cccctgtaat gatgactctc 20
<210>2923
<211>20
<212>DNA
<400>2923
actggatccg ctgctgcaaa 20
<210>2924
<211>20
<212>DNA
<400>2924
gttctctgctg aagctattgc 20
<210>2925
<211>20
<212>DNA
<400>2925
cacttactgc agaagctcgt 20
<210>2926
<211>20
<212>DNA
<400>2926
gcatgtagac ggtgtctatg 20
<210>2927
<211>20
<212>DNA
<400>2927
cgttggctag gcggaatggt 20
<210>2928
<211>20
<212>DNA
<400>2928
ggttcgaatc cccttgggggt 20
<210>2929
<211>20
<212>DNA
<400>2929
cgaactcaga gcagtgacta 20
<210>2930
<211>20
<212>DNA
<400>2930
ggctgccacc aatgttatac 20
<210>2931
<211>20
<212>DNA
<400>2931
ggctaagcaa actagacgag 20
<210>2932

```

<211>20
<212>DNA
<400>2932
tgcccaaagc cgggatcgaa 20
<210>2933
<211>20
<212>DNA
<400>2933
catttattcg tcttggeccc 20
<210>2934
<211>20
<212>DNA
<400>2934
gccagagtac caagaacatc 20
<210>2935
<211>20
<212>DNA
<400>2935
gccaacttga gctgaaagag 20
<210>2936
<211>20
<212>DNA
<400>2936
ccgctttgtc aatcgctctt 20
<210>2937
<211>20
<212>DNA
<400>2937
gacccctcat cagcttccca 20
<210>2938
<211>20
<212>DNA
<400>2938
cctggagtgg ttttcttggg 20
<210>2939
<211>20
<212>DNA
<400>2939
cctgagccat gattctagga 20
<210>2940
<211>20
<212>DNA
<400>2940
ggctctgtgc ttccttaaga 20
<210>2941
<211>20
<212>DNA
<400>2941
ggttggacgt ctttctctgt 20
<210>2942
<211>20
<212>DNA
<400>2942
acgccgaatt ctttcgtagc 20
<210>2943
<211>20
<212>DNA
<400>2943
ggactgtaac ctaaccacag 20
<210>2944
<211>20
<212>DNA
<400>2944
gctcttcttc tttggatcct 20

```

<210>2945
<211>20
<212>DNA
<400>2945
gagggggaag gagaaaaaac 20
<210>2946
<211>20
<212>DNA
<400>2946
gcttggttcta ccttcgtcca 20
<210>2947
<211>20
<212>DNA
<400>2947
cgctttcttc ggtttcagga 20
<210>2948
<211>20
<212>DNA
<400>2948
cctaaaggag agagaaaggc 20
<210>2949
<211>20
<212>DNA
<400>2949
gcgttctcag caaggcaaaa 20
<210>2950
<211>20
<212>DNA
<400>2950
ctgcatcatt gccatcggat 20
<210>2951
<211>20
<212>DNA
<400>2951
cgttcagctt ctttctctcg 20
<210>2952
<211>20
<212>DNA
<400>2952
ggcggttcttc agcatcgaaa 20
<210>2953
<211>20
<212>DNA
<400>2953
tcctgctacc aagacggtat 20
<210>2954
<211>20
<212>DNA
<400>2954
gatgttggac accgattcca 20
<210>2955
<211>20
<212>DNA
<400>2955
cgacgattgg tcagaagtag 20
<210>2956
<211>20
<212>DNA
<400>2956
cgactgttgt tgcccaaaag 20
<210>2957
<211>20
<212>DNA
<400>2957

gggggtgcacg aaaaatagga 20
<210>2958
<211>20
<212>DNA
<400>2958
actatagtat cagcgggggc 20
<210>2959
<211>20
<212>DNA
<400>2959
cttgatgcaa gacgatgagc 20
<210>2960
<211>20
<212>DNA
<400>2960
cggcactgtc agaatcttct 20
<210>2961
<211>20
<212>DNA
<400>2961
catacgccgt ctagcatctt 20
<210>2962
<211>20
<212>DNA
<400>2962
ggatcgctac gccatttaca 20
<210>2963
<211>20
<212>DNA
<400>2963
gaagatggcc tgcaattgct 20
<210>2964
<211>20
<212>DNA
<400>2964
tgcagaaaca gcattgagcg 20
<210>2965
<211>20
<212>DNA
<400>2965
cccgtcatta ccgacagtaa 20
<210>2966
<211>20
<212>DNA
<400>2966
gagttccaag gattctgtcc 20
<210>2967
<211>20
<212>DNA
<400>2967
gtatcagcag atggaggcaa 20
<210>2968
<211>20
<212>DNA
<400>2968
cctgatccta gtatcttccc 20
<210>2969
<211>20
<212>DNA
<400>2969
ccttctttgg tgcattgcag 20
<210>2970
<211>20
<212>DNA

<400>2970
gggaatacac agattcgggc 20
<210>2971
<211>20
<212>DNA
<400>2971
tccttccttc ccttttagagc 20
<210>2972
<211>20
<212>DNA
<400>2972
ggcgttacag caatttgga 20
<210>2973
<211>20
<212>DNA
<400>2973
gcaggcctat gttttgcagt 20
<210>2974
<211>20
<212>DNA
<400>2974
gtgtacctga gtacatgacg 20
<210>2975
<211>20
<212>DNA
<400>2975
cactcttgcc tcttgtagaa 20
<210>2976
<211>20
<212>DNA
<400>2976
tgcttgtaa actgccatcg 20
<210>2977
<211>20
<212>DNA
<400>2977
cgactcagtc ctttagctcg 20
<210>2978
<211>20
<212>DNA
<400>2978
ccagaaaccc ggcaattttg 20
<210>2979
<211>20
<212>DNA
<400>2979
catggacact taggagagag 20
<210>2980
<211>20
<212>DNA
<400>2980
cgagcaaagg aaatccctca 20
<210>2981
<211>20
<212>DNA
<400>2981
ctttaagggt gctggcctgt 20
<210>2982
<211>20
<212>DNA
<400>2982
gctctatcta cagaaagcgg 20
<210>2983
<211>20

<212>DNA
<400>2983
actgcaaaaa cgcggcaggc 20
<210>2984
<211>20
<212>DNA
<400>2984
cacccgatc tcagggcata 20
<210>2985
<211>20
<212>DNA
<400>2985
gaggatatgc gttccctctt 20
<210>2986
<211>20
<212>DNA
<400>2986
cgaatgtaga tcctctcgtc 20
<210>2987
<211>20
<212>DNA
<400>2987
gaattccacc tccttacctg 20
<210>2988
<211>20
<212>DNA
<400>2988
aagcaagcgt cttcatagc 20
<210>2989
<211>20
<212>DNA
<400>2989
ccccacctgg gatcaattat 20
<210>2990
<211>20
<212>DNA
<400>2990
gagaccttca gggaaaccta 20
<210>2991
<211>20
<212>DNA
<400>2991
atacctcacc cggatctcag 20
<210>2992
<211>20
<212>DNA
<400>2992
ggcaaaaatc ctgtagatcc 20
<210>2993
<211>20
<212>DNA
<400>2993
gatatccagg gtagcgcttt 20
<210>2994
<211>20
<212>DNA
<400>2994
gattccctgt gtctttgtgc 20
<210>2995
<211>20
<212>DNA
<400>2995
ttcgctcccc cagcacctac 20
<210>2996

<211>20
<212>DNA
<400>2996
gctaatagaga ctgtctttgg 20
<210>2997
<211>20
<212>DNA
<400>2997
ccctctgata caaaaacttg 20
<210>2998
<211>20
<212>DNA
<400>2998
gaacatctcc taagctgctg 20
<210>2999
<211>20
<212>DNA
<400>2999
gaatgaacac cctcagcact 20
<210>3000
<211>20
<212>DNA
<400>3000
gacatctcca agagttctgc 20
<210>3001
<211>20
<212>DNA
<400>3001
gttggttggtg gttcatgggt 20
<210>3002
<211>20
<212>DNA
<400>3002
gcttcgcac tttatttgc 20
<210>3003
<211>20
<212>DNA
<400>3003
caaaggcctt accaaagcac 20
<210>3004
<211>20
<212>DNA
<400>3004
gcgtttctac aaaacccgt 20
<210>3005
<211>20
<212>DNA
<400>3005
ggactactgg gttatcttgc 20
<210>3006
<211>20
<212>DNA
<400>3006
ctctcatgat cttctcgctg 20
<210>3007
<211>20
<212>DNA
<400>3007
gcttgggcga accaaaactt 20
<210>3008
<211>20
<212>DNA
<400>3008
cgatacctgt cagcagcttt 20

<210>3009
<211>20
<212>DNA
<400>3009
gcatcacgtg ttgtctttgc 20
<210>3010
<211>20
<212>DNA
<400>3010
cccgaagcaa tccagtagat 20
<210>3011
<211>20
<212>DNA
<400>3011
tgaagcaaag cgccgtttac 20
<210>3012
<211>20
<212>DNA
<400>3012
cgagccatgt atttcagtcc 20
<210>3013
<211>20
<212>DNA
<400>3013
cgatacctgt cagcagcttt 20
<210>3014
<211>20
<212>DNA
<400>3014
ggatgttgtg gtgaagagtg 20
<210>3015
<211>20
<212>DNA
<400>3015
cttggagagg gctatatagg 20
<210>3016
<211>20
<212>DNA
<400>3016
caaatgcgg gtcctttgag 20
<210>3017
<211>20
<212>DNA
<400>3017
gctcaaggtg cggagtaaaa 20
<210>3018
<211>20
<212>DNA
<400>3018
gattgtggtg tgacatgcca 20
<210>3019
<211>20
<212>DNA
<400>3019
ggggcttggg caatctcatt 20
<210>3020
<211>20
<212>DNA
<400>3020
ccacgtctcc tcaagatttc 20
<210>3021
<211>20
<212>DNA
<400>3021

caagaaatcc cagtgcgagt 20
<210>3022
<211>20
<212>DNA
<400>3022
ctgatgtctt cgcaacccat 20
<210>3023
<211>20
<212>DNA
<400>3023
ccacgtctcc tcaagatttc 20
<210>3024
<211>20
<212>DNA
<400>3024
ccttgtgctg cctttactgt 20
<210>3025
<211>20
<212>DNA
<400>3025
cctacctctc tgctttcttc 20
<210>3026
<211>20
<212>DNA
<400>3026
tcactctctt aaaggtctcg 20
<210>3027
<211>20
<212>DNA
<400>3027
tcagccggct tctttaccca 20
<210>3028
<211>20
<212>DNA
<400>3028
gagagacaaa ctccgattac 20
<210>3029
<211>20
<212>DNA
<400>3029
gtcgatctcc aagagtatct 20
<210>3030
<211>20
<212>DNA
<400>3030
tctaaagaag ccaccctctc 20
<210>3031
<211>20
<212>DNA
<400>3031
ccaccaactt cttcacctga 20
<210>3032
<211>20
<212>DNA
<400>3032
tcgggacgct tatctgcaaa 20
<210>3033
<211>20
<212>DNA
<400>3033
ccccatctaa tcctgttgtc 20
<210>3034
<211>20
<212>DNA

<400>3034
gaacgacggt atccacaatc 20
<210>3035
<211>20
<212>DNA
<400>3035
atcggcatcc caaggctccta 20
<210>3036
<211>20
<212>DNA
<400>3036
ccgtttcttct tgcgatgagt 20
<210>3037
<211>20
<212>DNA
<400>3037
ccaccaagta gtggtgtaac 20
<210>3038
<211>20
<212>DNA
<400>3038
gggttttttag aggtttgtgg 20
<210>3039
<211>20
<212>DNA
<400>3039
cgcagattgg ccttcttcta 20
<210>3040
<211>20
<212>DNA
<400>3040
ctgtgatctt ttggctttga 20
<210>3041
<211>20
<212>DNA
<400>3041
cacttgctgg tactgcacta 20
<210>3042
<211>20
<212>DNA
<400>3042
ctgacgtccg atgtatttgc 20
<210>3043
<211>20
<212>DNA
<400>3043
gccgatgaga attcctgtag 20
<210>3044
<211>20
<212>DNA
<400>3044
gattggcggtt gctgaattcc 20
<210>3045
<211>20
<212>DNA
<400>3045
gggaagatgt ccgttcagtt 20
<210>3046
<211>20
<212>DNA
<400>3046
ctacagctaa agctgagtcc 20
<210>3047
<211>20

WO 99/27105

PCT/IB98/01890

```

<212>DNA
<400>3047
ggagatgtct tcttcaccga      20
<210>3048
<211>20
<212>DNA
<400>3048
caccagactc tacagtacca      20
<210>3049
<211>20
<212>DNA
<400>3049
gaaccaacga cctaagtctc      20
<210>3050
<211>20
<212>DNA
<400>3050
gcgaagataa actgagatcc      20
<210>3051
<211>20
<212>DNA
<400>3051
gtgttcttga cctcgggttag      20
<210>3052
<211>20
<212>DNA
<400>3052
agacgcagaa ggcattagca      20
<210>3053
<211>20
<212>DNA
<400>3053
gagatcctca gtaacaaaca      20
<210>3054
<211>20
<212>DNA
<400>3054
ttcaggagta tgcgtaccgt      20
<210>3055
<211>20
<212>DNA
<400>3055
cgattcttct tagccggagt      20
<210>3056
<211>20
<212>DNA
<400>3056
gggagtgaat acgatgaggt      20
<210>3057
<211>20
<212>DNA
<400>3057
cagctgggtct tgagggtttac      20
<210>3058
<211>20
<212>DNA
<400>3058
ggagcttctt aaagcatgtc      20
<210>3059
<211>20
<212>DNA
<400>3059
cggctctctgt atacgatacg      20
<210>3060

```

<211>20
<212>DNA
<400>3060
ctccagacaa gacaagaact 20
<210>3061
<211>20
<212>DNA
<400>3061
ccccttcaag atctcatagg 20
<210>3062
<211>20
<212>DNA
<400>3062
ggatggagga ttttcattcc 20
<210>3063
<211>20
<212>DNA
<400>3063
caccagaaa cccttcagtt 20
<210>3064
<211>20
<212>DNA
<400>3064
gccttcttga tggcaaacct 20
<210>3065
<211>20
<212>DNA
<400>3065
cgggggtattg tgcagaagat 20
<210>3066
<211>20
<212>DNA
<400>3066
ccgacaagct ttcagatgct 20
<210>3067
<211>20
<212>DNA
<400>3067
ctctaaggct agaaatcccc 20
<210>3068
<211>20
<212>DNA
<400>3068
ctgcgcaatc tttggctact 20
<210>3069
<211>20
<212>DNA
<400>3069
gagagggtag tgaaagtcc 20
<210>3070
<211>20
<212>DNA
<400>3070
gcagtcgtcg tgttttctca 20
<210>3071
<211>20
<212>DNA
<400>3071
ccaagtttcg tatgtggttg 20
<210>3072
<211>20
<212>DNA
<400>3072
ggtcgtgctt tgaagatgac 20

<210>3073
<211>20
<212>DNA
<400>3073
cgtcgatttt gcactcaagg 20
<210>3074
<211>20
<212>DNA
<400>3074
cctgatgctg ttttgcaagg 20
<210>3075
<211>20
<212>DNA
<400>3075
cgagtgcata atgttgctgc 20
<210>3076
<211>20
<212>DNA
<400>3076
gggggtggaag gtttttagatg 20
<210>3077
<211>20
<212>DNA
<400>3077
cgttgggtctg aaggaaagtt 20
<210>3078
<211>20
<212>DNA
<400>3078
gagctagggt acatttctgg 20
<210>3079
<211>20
<212>DNA
<400>3079
cggagccttg ttcttgtaag 20
<210>3080
<211>20
<212>DNA
<400>3080
ccataaatgg gactcatggc 20
<210>3081
<211>20
<212>DNA
<400>3081
gcactagaat acaaggacct 20
<210>3082
<211>20
<212>DNA
<400>3082
cgtaattgct tgcaagaggc 20
<210>3083
<211>20
<212>DNA
<400>3083
cgaggggata agaacaggat 20
<210>3084
<211>20
<212>DNA
<400>3084
gcctatatct ttgcttcttg 20
<210>3085
<211>20
<212>DNA
<400>3085

WO 99/27105

PCT/IB98/01890

cagacgagct ggtgatttga 20
 <210>3086
 <211>20
 <212>DNA
 <400>3086
 cctaccgttg catgtccgca 20
 <210>3087
 <211>20
 <212>DNA
 <400>3087
 ctaggacggg aagtatactc 20
 <210>3088
 <211>20
 <212>DNA
 <400>3088
 ctaatttcg cggttaaggt 20
 <210>3089
 <211>20
 <212>DNA
 <400>3089
 ggaagcacag tttgtgggaa 20
 <210>3090
 <211>20
 <212>DNA
 <400>3090
 ggtctatatg aaggctagca 20
 <210>3091
 <211>20
 <212>DNA
 <400>3091
 ctgtaggacg taaccgttga 20
 <210>3092
 <211>20
 <212>DNA
 <400>3092
 cgattgtgca tggcgagag 20
 <210>3093
 <211>20
 <212>DNA
 <400>3093
 cgggctttct cttcagagtt 20
 <210>3094
 <211>20
 <212>DNA
 <400>3094
 ggtccaggag tctgattcaa 20
 <210>3095
 <211>20
 <212>DNA
 <400>3095
 ctaggacacg aaacgtggaa 20
 <210>3096
 <211>20
 <212>DNA
 <400>3096
 ggcgcgatgc cttggttaat 20
 <210>3097
 <211>20
 <212>DNA
 <400>3097
 aactcagtaa gtggcgattg 20
 <210>3098
 <211>20
 <212>DNA

<400>3098
ggagctgttt acagatgcca 20
<210>3099
<211>20
<212>DNA
<400>3099
gtatccaagg cttgttggca 20
<210>3100
<211>20
<212>DNA
<400>3100
gaagctccca tgaatgaagg 20
<210>3101
<211>20
<212>DNA
<400>3101
ctgcgaagta gagcgtcttc 20
<210>3102
<211>20
<212>DNA
<400>3102
ggggaagttt atagtcagga 20
<210>3103
<211>20
<212>DNA
<400>3103
gcttttccgc gtcactttga 20
<210>3104
<211>20
<212>DNA
<400>3104
agcatatcgc acaaagagcg 20
<210>3105
<211>20
<212>DNA
<400>3105
gcctttgctc tgtgagaaac 20
<210>3106
<211>20
<212>DNA
<400>3106
gcgttggtga ttgaggactc 20
<210>3107
<211>20
<212>DNA
<400>3107
cacgtcgatc ttccatatgc 20
<210>3108
<211>20
<212>DNA
<400>3108
ctttcagagg agttttcctg 20
<210>3109
<211>20
<212>DNA
<400>3109
ggagatggtc taccagcaat 20
<210>3110
<211>20
<212>DNA
<400>3110
ggactgctga catctccaag 20
<210>3111
<211>20


```

<212>DNA
<400>3111
gcgacaagtc gttttggaag    20
<210>3112
<211>20
<212>DNA
<400>3112
ggttttctggt tttgctgctg    20
<210>3113
<211>20
<212>DNA
<400>3113
tgcgatcccc tcattgtaac    20
<210>3114
<211>20
<212>DNA
<400>3114
ctgcaacttg gcttgacttg    20
<210>3115
<211>20
<212>DNA
<400>3115
cctacggaat tgcacgcatt    20
<210>3116
<211>20
<212>DNA
<400>3116
gcgagctgag gtatttctgt    20
<210>3117
<211>20
<212>DNA
<400>3117
ctgggttttgc tgctgtccat    20
<210>3118
<211>20
<212>DNA
<400>3118
attgggctgt agatggccag    20
<210>3119
<211>20
<212>DNA
<400>3119
cgcaaggttc tcttcacctt    20
<210>3120
<211>20
<212>DNA
<400>3120
tttgtggctg cgtagtacag    20
<210>3121
<211>20
<212>DNA
<400>3121
ctggcaatgc aagtaaagcc    20
<210>3122
<211>20
<212>DNA
<400>3122
ccaggagcaa gagctataga    20
<210>3123
<211>20
<212>DNA
<400>3123
cctgaagtta gtgagaacgg    20
<210>3124

```

<211>20
<212>DNA
<400>3124
gatcggatgc tcgttcaaag 20
<210>3125
<211>20
<212>DNA
<400>3125
acggccgtct ttgttcgata 20
<210>3126
<211>20
<212>DNA
<400>3126
gtccaagtac acacagaaag 20
<210>3127
<211>20
<212>DNA
<400>3127
ctagcgatgc gaagcaaaag 20
<210>3128
<211>20
<212>DNA
<400>3128
gagagaagtg taccatggaa 20
<210>3129
<211>20
<212>DNA
<400>3129
gggatagagc gttaggattc 20
<210>3130
<211>20
<212>DNA
<400>3130
gcagcatatg ctgccctttt 20
<210>3131
<211>20
<212>DNA
<400>3131
gaggaagagg gcactacatt 20
<210>3132
<211>20
<212>DNA
<400>3132
ccgttgccaa tgtaaaaggg 20
<210>3133
<211>20
<212>DNA
<400>3133
gcaaacctag gagggaagtt 20
<210>3134
<211>20
<212>DNA
<400>3134
gtgatgcctt gggatcacta 20
<210>3135
<211>20
<212>DNA
<400>3135
cacaagcatt cgtaggtgga 20
<210>3136
<211>20
<212>DNA
<400>3136
gcgattacta agggagctct 20